INTEGRATED SOCIAL HABITATS

Enhancing Social Spaces for Future
Urban Multi-Family Residential Dwellings

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ABSTRACT

As I look back at my family's lifestyle within a mid-rise apartment in Honolulu, I realize that the social relationships we have had with our neighbors over the last twenty years could have been stronger. Although it would be unrealistic to think that we would bond with every family in the six-story building complex, the only opportunity we had to engage in conversation with the families that *were* friendly and neighborly towards us was when we encountered each other in the parking lot elevator, or hallways leading to our apartment door. It was unlikely that one family would invite another into their apartment due to awkwardness and the potential loss of privacy. It is ironic that neighbors living in such close proximity would be so unsociable with one another.

A simple solution that would have allowed our family to engage in social interaction with other families is the provision of a shared space dedicated to social activities that all residents could access. Although it is not guaranteed that every resident would utilize such a space, it would provide an opportunity for people to slowly establish and nurture relationships with others based on various factors such as personality characteristics and commonalities.

It would be easy to suggest to an architect to designate a communal space on each floor in a residential dwelling. However, how successful can that space be if the residents on that floor barely use it because they are more focused on moving quickly from point A (car) to point B (apartment)? The so-called communal space would be dead, wasted space. How can architects design such a space so that it becomes a well-utilized, flourishing space for social interaction? This research paper maintains that these social spaces, rather than the apartment units, should become the focal points of the residential communities in mid-rise and high-rise buildings.

The purpose of this research paper is to study the value of social interaction in our everyday lives and precedents that provide such social activities today. Correlational research and analysis is implemented to compare and contrast various types of social

spaces in existing residential urban dwellings and the public realm. Design guidelines for the physical framework of future social spaces, specifically within urban residential low-rise, mid-rise, and high-rise dwellings, are provided.

The second half of this research paper applies these design guidelines on a mixed-use residential housing prototype in a unique setting within the urban context of Honolulu, Hawaii. Computer-aided, three-dimensional modeling and simulation are used to discover various spatial solutions that can possibly nurture social interaction within the residential setting.

The ultimate goal of this research paper is to introduce new thought and design processes for future urban residential dwellings. The design guidelines presented in this body of research encourage a more socially interactive lifestyle for residents and the general public.

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The inspiration for my doctoral dissertation came from an international trip to Singapore for a Comprehensive Design Studio in February 2008. The goal of our visit to the Republic of Singapore was to gain information on the city-state's history, climate, demographics, culture, and government structure, and site context of our project. Our studio project was the design of a mixed-use mid-rise or high-rise residential building within a small site.

The abundance of residential high-rises throughout the island footprint immediately caught my attention. I had never seen such a variety of these building types – single or multiple building blocks, some of which were connected through mega open-air bridges that were topped with trees. Who thought of planting trees on top or within the opening of a building? Many of the designs of the porous building envelopes looked chaotic yet rhythmic and sophisticated, going beyond the traditional drywall and balcony or curtain wall configurations that I had seen so much in Hawaii. These floating platforms were "open-air" spaces in the literal sense, and I thought they were an interesting way to provide recreational, semi-private spaces for residents. I saw such one-of-a-kind spaces as a means of promoting interactions between neighbors. After a weeklong stay in the compact city-state of Singapore, I realized that mid-rise and high-rise residential buildings in Hawaii have the potential to go far beyond their current conventional standards.

Figure 1 Newton Suites by WOHA, Singapore
Figure 2 The Pinnacle at Duxton by RSP Architects Planners and Engineers (PTE) Ltd., Singapore

As I began researching the reasoning behind these unique, open-air spaces, I realized that the importance of social interaction, and that creating a sociable living environment is key to enhancing the vitality and quality of life of the people that live within it. Social interaction is a necessary activity in daily life, and the built environment plays a significant role in fostering it. The research presented at the beginning of this paper confirms that social interaction is a fundamental human need. The benefits of social interaction increase human quality of life. Humans are social entities; therefore the built environment, more specifically, the living environment, must cater to this lifelong necessity.

The concept of social space in residential building types is not new to the architect. Case studies of existing residential building types demonstrate that most designs provide some type of place designated for social interaction, although most are limiting as to what a user can do within the space. In modern residential building types, communal spaces are considered an option rather than mandatory. By stating the benefits of social space, however, I hope to convince the reader that the integration of social space is essential to a thriving, interactive, and sociable residential environment.

Throughout my twenty-four years of living in Hawaii, I have become connected emotionally to a few places around the island of Oahu. Ala Moana Beach Park, Waikiki Beach Walk, and Diamond Head have become a few of my “third places” to do outdoor activities. The concept of third place refers to one’s “go-to” place where s/he spends a lot of time outside of the home (“first place”) and work (“second place”). My emotional connection to these places is largely due to many positive memories I have of spending time in them with my family and friends. I am also attracted to these places because they are positive environments for social opportunities with strangers.

The amount of people that use a space reflects its spatial characteristics and the various amenities it offers. The true success of a space is subjective; it can only be judged by each individual and/or group in terms of how emotionally connected they become within and to space. These types of places are not necessarily clean and manicured. One’s emotional connection with a space can make it highly significant, meaningful, and one’s “go-to” place.

How can a person find such a space without having to travel far from his or her own home? How can a space within a residential dwelling become transformed into one that provides opportunities for social interaction? How can these social spaces affect the social relationships among neighbors, and can they change the design process of future housing prototypes?

The last chapter of the research presents a set of design guidelines gathered from existing knowledge and correlational analyses of precedents. An architect, or anyone that plans to design social space, can use these guidelines as a tool to create, enhance, or transform a space in a residential building type into a viable one that will be able to nurture a social environment for its potential users.

The design prototype for an urban residential dwelling will apply these design guidelines relative to its site, region, and cultural context. The prototype will not imply that it can be copied and pasted into a site on a completely different context. The rationale behind the

design decisions made for the prototype will be reflected in the design guidelines.

The reader will gain a general understanding of the spaces created within the prototype through three-dimensional computer modeling and simulated perspective renderings. Plan, elevation, and section drawings will also be provided to show how rooms and spaces are laid out in a more detailed manner.

The author encourages designers, architects, business entrepreneurs, and others who want to design social spaces that are not in the residential context to use the design guidelines presented as they characterize most types of social spaces at varying scales. This paper is open to further research and new design ideas as a “living” document for future use.

PART I
RESEARCH

Social Habitat:

A social habitat is a living environment in a given context that fosters social interaction and community life among two or more household entities.

The first part of this research paper provides an understanding that social interaction is a daily human necessity. A social lifestyle provides multiple benefits to the individuals, communities, and the environment. Since every human being has a physical and emotional attachment to a home, whether temporary or permanent, it is argued that the integration of social space into residential designs can promote a happy, healthy and social lifestyle both inside and outside of an individual's living environment. This research paper also presents and analyzes various types of existing contemporary residential building types that have been designed with the underlying concept of social space.

so • cial (adjective)

1 involving allies or confederates
2 marked or passed in pleasant companionship with friends or associates
3 of or relating to human society, the interaction of the individual and the group, or the welfare of human beings as members of society
4 tending to form cooperative and interdependent relationships with others[1]

in • ter • ac • tion (noun)

1 mutual or reciprocal action or influence [2]

1.1 HUMAN NEED FOR SOCIAL INTERACTION

Abraham Maslow, an American professor of psychology in New York, is known for his theory on the hierarchy of human needs. As shown in Figure 3, he holds that the primary human needs are physiological ones such as air, water, food, and sleep. Moving up, the layered pyramid shows that the next important human needs are safety, love, belonging, esteem, and at the top, self-actualization. His theory parallels the various stages of human psychological growth and the physical and psychological requirements to reach these stages. These human needs, Maslow theorizes, are essential to an individual's motivation for constant betterment. Maslow acknowledges that these human needs can occur simultaneously, but that depending on the individual's environment, it is possible for one human need to dominate over the others.[3]

[1] The Merriam-Webster. "Social."
[2] The Merriam-Webster. "Interaction."
[3] Goble, *The Third Force: The Psychology of Abraham Maslow,* 62.

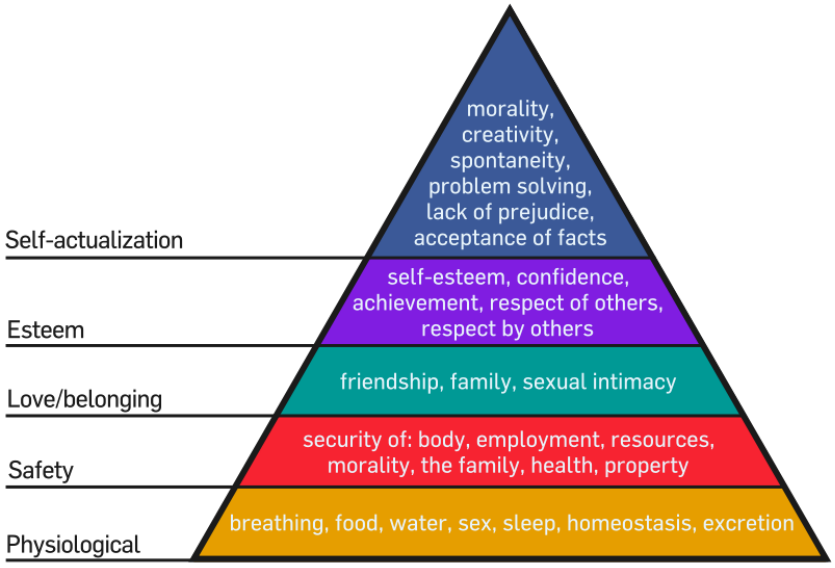

Figure 3 Interpretation of Abraham Maslow's hierarchy of human needs

Social interaction plays into these levels of motivation on a daily basis. Starting at the stage of infancy, children are dependent on the actions and interactions of their parents to learn about the world that surrounds them. Social interaction plays a fundamental role in the process of cognitive development. Lev Vygotsky, a Russian psychologist who investigated child development, felt that social learning precedes development. He states that "every function in the child's cultural development appears twice: first, on the social level, and later, on the individual level; first, between people (interpsychological) and then inside the child (intrapsychological)."[4] According to Vygotsky, humans use tools that develop from a culture, such as speech and writing, to mediate their social environments. Initially, children develop these tools solely for their social functions, as ways to communicate needs. Vygotsky believed that the internalization of these tools led to higher thinking skills.[5]

The motivational level of love and belonging are completely dependent on the individual's relationships with their family, friends, and lovers. The people closest to an individual are most likely to influence his or her self-respect, self-esteem, and confidence. Emotionally significant relationships establish an individual's sense of belonging and acceptance into a

[4] Vygotsky, *Mind and Society: The Development of High Mental Processes.*

[5] "Social Development Theory (Vygotsky)."

group of people. A grouping of emotionally significant relationships becomes an individual's social support system, which is necessary for success, good health, security, and sense of well-being.[6]

Self-actualization is the realization of an individual's fullest potential. The potential is unique to the individual and can range from a desire to become a successful architect, professional athlete, doctor, or political leader to a full-time parent. Self-actualization can only be achieved after one has met all of the preceding basic needs represented in the pyramid. It is impossible for self-actualization to be achieved without any form of communication and interaction with other people.

Other philosophers have criticized Abraham Maslow's theory of hierarchy of human needs. Manfred Max-Neef, a Chilean economist and philosopher, argued that there should not be a hierarchy for fundamental human needs.[7] It can also be argued that one person's human needs may or may not be met as easily as another person's due to his or her living environment or upbringing. If shown in a non-hierarchical manner, however, Maslow's theory of human needs can be validated as universal human needs through other studies on human psychological development.[8]

Cellular phones, social media, the internet and even online gaming offer additional venues for social interactions. Many people find that using these methods of communication can be more efficient, safer, and easier than interacting face-to-face. However, the quality of such social interaction is narrowed due to the limitation of senses.

1.2 CATALYSTS FOR SOCIAL NETWORKING

Proximity-Attraction Principle

Research indicates that people tend to choose friends that live or work nearby as they are more accessible and simply because it is simply more efficient than attaining friends who

[6] Fischer, To Dwell Among Friends: Personal Networks in Town and City, 3.
[7] Wahba, and Bridwell, "Maslow reconsidered: A review of research on the need hierarchy theory," 212–240.
[8] Tay and Diener, "Needs and Subjective Well-Being Around the World," 354–365.

live further away. A study for a student housing project asked students who they were acquainted with within the dormitories. Results showed that the students, who did not know their neighbors before moving into the dormitories, were most familiar with their next-door neighbors. As a result of the "mere exposure effect," people feel more positive towards other people, places, or things they see frequently. This feeling can subconsciously encourage individuals to interact socially with strangers.[9] This principle can correlate directly with the possibilities in which residents begin to socialize with their neighbors in the same urban residential dwelling.

Affiliation Motive

Psychologists have hypothesized that "affiliation motive," a desire to be near others and to have pleasant and affectionate interactions with them, is a fundamental desire and can be the psychological driver that encourages an individual to strike up a conversation with a stranger. This type of motive is imperative because it is a common way to establish acquaintances and friendships.[10]

Webster's dictionary defines a friend as "someone on terms of affection and regards for another who is neither relative nor lover."[11] Nurturing relationships with friends are more voluntary than relationships among family members. A group of students were asked for their opinion on the definition of friendship and similar topics such as the enjoyment of each other's company, shared interests, trust, acceptance, self-disclosure and helping one another in times of need were common themes in the ensuing discussion.

It is human instinct to seek the company of another human being, or in some cases, animal, when undergoing any type of emotions. When one goes through high emotional stress levels or states of depression, s/he seeks the comfort and support of another individual, although sometimes a positive response is not always reciprocated when another person offers emotional support. Nonetheless, human interaction is a daily necessity to be a happy and motivated individual.

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[9] Kenrick, Neuberg and Cialdini, *Social Psychology: Unraveling the Mystery*. 238.
[10] Kenrick, Neuberg and Cialdini, *Social Psychology: Unraveling the Mystery*. 216.
[11] Webster's Dictionary. http://www.merriam-webster.com/.

1.3 THE BENEFITS OF SOCIAL INTERACTION

Emotional Support

Emotional support, an aspect of social support, is defined as the emotional, informational, or material assistance provided by other people.[12] Emotional support stems from acts of affection and nurturing, which most individuals first receive from their mothers and fathers at birth. It is a natural human instinct for individuals to turn to another person for support during emotional distress. "Humans, like the members of other species, are safer in numbers."[13]

Studies show that social support has a direct relationship to stress levels. Emotional support also does not necessarily have to come from other people. "Man's best friend," or a dog, can be the best source of companionship. For some people, having a human companion while under high levels of stress can increase one's anxiety. However, having a dog at one's side can significantly reduce physiological stress. This is especially true for elderly people, who are more likely to survive heart attacks and recover quickly with the companionship of a dog.[14] The next section researches the benefits of companionship, which can be found beyond the human species.

Friendships

Researchers around the world have implemented scientific studies that correlate animal friendships and human friendships. Primatologist John Mitani has been studying chimpanzees that live in the forests of Kibale National Park in Uganda since 1995. Over seventeen years, he has observed the friendship between two older males of the Kibale group whom the researchers named Hare and Ellington.

Hare and Ellington were unrelated yet inseparable. They went on hunting trips with other males and shared prey rather than competed for it. They traveled through the forests walking side by side or 100 yards apart, keeping track of each other through loud, hooting calls. If one got into a fight, the other would back him up. In 2002, Hare's behavior

[12] Kenrick, Neuberg and Cialdini, *Social Psychology: Unraveling the Mystery*. 221.
[13] Ibid.
[14] Kenrick, Neuberg and Cialdini, *Social Psychology: Unraveling the Mystery*. 222.

changed suddenly after Ellington's death. Once a highly social, high-ranking ape, he secluded himself for a few weeks to mourn his best friend's death.[15]

Researchers who study animal friendships have classified a behavior that demonstrates similar characteristics to true friendship as "reciprocal altruism." Reciprocal altruism is the act of doing a favor for another with the expectation of a favor in return. Though this type of behavior may be the only motivation for interaction among certain species of animals, researchers continue to study the deeper meaning behind the cooperative behavior that other animals exhibit. While different species experience and exhibit friendship in different ways, there is one commonality – animals that find companionship with other unrelated animals of the same species have a longer life and a lower incidence of disease. Social relationships among animals inspire us to think about the way in which we view our relationships as well as the way we take care of ourselves in terms of health. "One thing is clear: humans have always known that it's hard to get through life without friends, and it appears that animals are wise to that secret too."[16]

A Healthier Lifestyle

In 2012, scientists from Brigham Young University in Honolulu, Hawaii, gathered data from more than 300,000 people. They found that social isolation can increase the risk of premature death as much as smoking habits and even more than obesity. Past studies have found evidence that those with friendships and close social networks have lower blood pressure and stress levels, and stronger immune systems compared to those who have poor social networks.[17]

1.4 EFFECTS FROM SOCIAL ISOLATION

Social isolation can be a torturous feeling which, can be the result of various factors or a mix of them. These include losing a job, living alone, a recent move to another home,

[15] Zimmer, Carl. "Friends with Benefits." Time Magazine, Vol 179, No. 7, 2012. 34-39.
[16] Ibid.
[17] Ibid.

divorce, and a loss of a loved one. The simple thought of ending up alone can be self-defeating and cause one to act irrationally.

Standing within a crowd of people isn't enough to alleviate the feeling of social isolation. Being ignored by strangers within a crowded place is a lonely experience in itself. One must socially interact with another and gain a sense of belonging within a group to uproot the feeling of social isolation. While the feeling of social isolation can be triggered involuntarily, some people choose solo living as a lifestyle for personal reasons.

The trend of living alone has boomed since 1950. In 1950, living solo for short stints was common for migrant working men in sprawling western states such as Alaska, Montana, and Nevada. During this time, 4 million Americans lived alone and made up of 9 percent of households. According to the 2011 Census data, nearly 33 million Americans live alone, making up 28 percent of all U.S. households. This ties them with childless couples as a more prominent residential type than the nuclear family, multigenerational family, or roommate or group home.[18]

Single-person households are most common in the developed economies of western Europe, Australia, Canada, and the United States where around 30 percent of households are single-person households.[19] Over the past few decades, young adults between 18 and 34 have been the fastest growing populations that choose to live alone. In 2006, one-third of Canada's single-person households were made up of seniors aged 65 and over. The increasing number of seniors living alone is due to higher life expectancy and higher divorce rates in Canada.[20]

In his book *Going Solo*, New York University sociologist Eric Klinenberg claims that this growing trend is a result of mass urbanization, communications technology, and freedom of the individual. While living alone can yield benefits such as individual freedom, personal control, and self-realization, he argues that social isolation diminishes quality of life. He cites

[18] Klineberg, Time Magazine, "Living alone is the new norm," 60-62.
[19] Agriculture and Agri-Food Canada, "Global Consumer Trends Individualism, accessed March 8, 2012, http://www.ats.agr.gc.ca/inter/5604-eng.htm
[20] Agriculture and Agri-Food Canada, "Global Consumer Trends Individualism, accessed March 8, 2012, http://www.ats.agr.gc.ca/inter/5604-eng.htm

Harvard psychiatrists Jacqueline Olds and Richard Schwartz, who warn that loneliness and social isolation is detrimental to an individual's health and happiness. "People who live alone are more likely to remain in their current state than anyone else except married couples with children. They're concentrated in big cities throughout the country, from Seattle to Miami, Minneapolis to New Orleans."[21]

Klinenberg first hypothesizes that the growing numbers of single-person households is a sign of how disconnected we have become. He conducted research to support his hypothesis, which includes interviews of 300 people who live alone to gain a better understanding of solo dwellers and their social connections. The results show that people who live alone compensate by being more socially active outside of their homes than those who live with other people.[22]

Solitary dwellers in the United States are primarily women between the ages of 35 to 64, possibly due to the increasing number of women in the workforce and later marriages. In her article, "Are Women Better at Living Alone?," Rebecca Tusus-Dubrow states that neither men nor women don't mind living alone athough women are better at maintaining relationships with family and friends, and single women over 35 are more likely to spend an evening with a neighbor or take part in a social group than men. "Women are more likely to have strong social networks, which enable them to live alone without being alone. Men are more at risk of withdrawing into isolation that, at the extremes, can be miserable and indeed dangerous."[23]

The evidence presented on the growing trend of single-person households in urban cities gives way to a higher demand of social spaces. While living alone is allows the individual to have a home in which s/he can find peace and solitude, it also gives him or her the option to choose when, where and how often s/he wants to socialize outside of their home. Through social media and the internet, an individual that lives alone can engage in conversations through email and socialize via social websites such as Facebook and Twitter while physically being alone. While convenient, social interaction without face-to-

[21] Klineberg, Time Magazine, "Living alone is the new norm," 62.
[22] Ibid.
[23] Tuhus-Dubrow, Rebecca, "Are Women Better at Living Alone?"

face contact, sound, or tactile sensory does not provide the full psychological benefits that physical forms of social interaction do.

1.5 GROUP DYNAMICS

The phrase "group dynamics" was coined German-American psychologist Kurt Lewin to describe the interactive psychological relationship in which members of a group form a common perception. Known as one of the modern pioneers of social psychology, Lewin broke the phrase "group dynamics" into two parts: first, "group"- a social unit of two or more individuals who share common beliefs and values, follow the same norms, and work towards a common aim – and second, "dynamics" – the flow of coherent activities which lead the group towards the establishment of its set of goals.[24] Lewin wrote his theory as a mathematical equation, making behavior equal to the function of individuals and the environment.[25]

Lewin's principles on group dynamics lend to the reasoning behind the way in which communities form. Extensive research in the sociology and urban design fields has defined the term "community" in a multiplicity of ways. The next sections will discuss the types of communities that people form and how the physical environment influences these types.

1.6 SENSE OF COMMUNITY

"Community" is a widely used term. In her book *Community: Pursuing the Dream, Living the Reality* , Suzanne Keller, Professor of Sociology Emeritus at Princeton University, defines community as "akin to an organism where the whole is more important than individual members."[26] Her definition is one that represents an old, organic model of the term that could limit the freedom of the individual. Community can also imply territoriality of

[24] Wikipedia. "Group Dynamics."
[25] eHow. "Social Interaction Theories."
[26] Keller, *Community: Pursuing the Dream, Living the Reality,* 4.

space based on a deeply rooted commonality such as race, origin, income level, or religion. Keller outlines various recurring themes in the definition of community:

Community as Place, Turf, and Territory

There is a "there" in this type of community, a place designated for the group. This place is shaped by the lifestyle, patterns, and habits of the inhabitants and has no specific scale.

Community as Shared Ideals and Expectations

Those within this type of community share a common emotional and sentimental attachment. These "habits of heart" include a state of mind, sense of duty, and coherent moral sentiments.

Community as a Network of Social Ties and Allegiances

This type of community requires social interaction between people who share common goals, such as an elementary school or recreational program. Everyone is voluntarily involved with a common sense of purpose.

Community as a Collective Framework

This type of community is configured through leadership, governance, and authority. The community is structured with a set of rules to guide the collective.

Keller emphasizes the basic requirement of affection for the other. That means groups formed by class, gender, nationality, ethnicity, or race are not defined as a community due to egoism. To qualify as a community, the group must have "consciousness of kind, a sense of belonging, and a shared destiny, past or future."[27]

A community can come in different sizes, but to maintain a true sense of community, individuals need to be in one at a scale in which they feel comfortable. "Individuals need communities small in scale but solid in structure that will offer them a sense of security and fulfillment."[28]

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[27] Keller, *Community: Pursuing the Dream, Living the Reality,* 8.
[28] Keller, *Community: Pursuing the Dream, Living the Reality,* 10.

Community through Shared Experiences

Communities also form through shared experiences, more specifically, the act of recovery from major and natural disasters. A disastrous event that makes a mark in history such as the devastating earthquakes in Japan in 2011, the September 11, 2001 World Trade Center terrorist attack, and 2005's Hurricane Katrina in New Orleans can unite a large group of people as they take part in the recovery process both physically and emotionally.

Disasters such as these can have a heavy emotional impact around the world, but especially in the location of the disaster. The collapse of the World Trade Center twin towers cost the lives of thousands, but shook the rest of America due to the act of terrorism. Airports cancelled flights, security heightened, and many Americans were afraid to travel by air. Despite these fears, a sense of national pride emerged and Americans offered support to the families who lost their relatives in the World Trade Center collapse and the troops who were sent to the Middle East to defend America from terrorist acts.

Natural disasters such as earthquakes and hurricanes displace survivors from their destroyed homes in massive numbers. After Hurricane Katrina, FEMA, the US Federal Emergency Management Agency, provided approximately 92,000 temporary housing units (THU) such as travel trailers, mobile homes, and park models, throughout Louisiana. FEMA THUs were not meant to serve as permanent housing. As of February 2012, about seven years after Hurricane Katrina, FEMA had transitioned all families from THUs into permanent homes in Louisiana.[29]

During the immediate aftermath of a disaster, people gathered to receive food and shelter as well as form groupings to cope with post-traumatic stress disorder and loss. Relief agencies relocated families that have previously lived close to each other together to better maintain some semblance of their pre-disaster daily routines and social groupings. Krzysztof Kaniasty, Professor of Social Psychology at Indiana University of Pennsylvania, suggests that creating a sense of normalcy through these methods reduces the chances of long-term problems such as anxiety, depression, and post-traumatic stress disorder.

[29] FEMA. "Last FEMA temporary housing unit leaves Orleans Parish."

In his article, “Focus on Community after Natural Disasters” in the *Herald Sun*, Kaniasty questions the idea of togetherness and altruism among disaster victims as a long-term community goal. The initial generosity and emotional support among victims and survivors will diminish as people continue to face the reality of loss and grief. This raises the concept of creating and recreating close-knit communities to foster emotional support as a long-term goal. “Maintaining strong social ties in the aftermath of natural disasters is just as important as rebuilding infrastructure to help people overcome traumatic events.”[30]

1.7 THE NEXT STEP

The next chapter presents studies on the way people interact with one another in the urban context. The body of research analyzes the way in which the characteristics of a space can influence an individual’s behavior and how its success or failure in creating a well-utilized social space plays a role in nurturing a sociable environment.

[30] Herald Sun. “’Focus on Community’ after Natural Disasters.”

Individual bonds to one another are the essence of society. Our day-to-day lives are preoccupied with people, with seeking approval, providing affection, exchanging gossip, falling in love, soliciting advice, giving opinions, soothing anger, teaching manners, providing aid, making impressions, keeping in touch – or worrying about why we are not doing these things. By doing all these things we create community…the relations these interactions define in turn define society, and changes in those relations mark historical changes in community life.[31] *– Claude, S. Fischer*

2.1 THE DEFINITION OF SOCIAL SPACE

Social space is a physical or virtual space where people can gather and interact.[32] Social spaces come in many variations, and are either private or publicly owned. Social spaces such as town squares, recreation centers and public parks are publicly owned, while shopping malls, rooftop gardens, nightclub venues and hotel ballrooms are privately owned. All examples are settings that can foster what Fischer calls "the essence of society," social bonds and the creation of new ones.

The most common social spaces are areas found on a city streetscape, which is involved in a pedestrian's street experience. These places gel the surrounding mixed-use spaces and function together to create a community hub that acts as both a transitional and recreational node.[33] While social interaction can happen virtually anywhere in space, social space can be dedicated towards high-load activities and in turn, social interaction.

[31] Fischer, *To Dwell Among Friends: Personal Networks in Town and City*, 2.
[32] Wikipedia, "Social Space."
[33] Pomeroy, "The Sky Court," 16.

2.2 THE THIRD PLACE CONCEPT

Ray Oldenburg, an urban sociologist from Florida who holds that informal public gathering places are essential for community and public life, identifies third places as "public places on neutral ground where people can gather and interact….third places allow people to put aside their concerns and simply enjoy the company and conversation around them." As the heart of a sociable community, Oldenburg suggests that third places are the foundation for a functioning democracy, social equality, and offer psychological support to individuals and communities.[34]

Applying the third place concept into a social space can turn a dead space into a living one. As mentioned in the abstract of this research paper, I propose the possibility of integrating social spaces within the residential setting to enhance community life. Oldenburg's description of a third place as an "informal public gathering" implies that a social space does not have a single function. If people find that such places can become their third place outside of the work place and *near* their homes, there are higher chances that these social spaces can also become well utilized due to its accessibility.

If these social spaces are intended to promote community life among multiple households within a residential dwelling, it is assumed that there is no such thing as a perfectly utilized social space for a group of residents. Residents do not get to choose their neighbors and tension may occur, just as in any other existing residential dwelling. The design of a social space should consider these possibilities.

2.3 TERRITORIALITY

Territoriality is a natural instinct in humans and animals that establishes social organization among individuals. Zoologists and ecologists have observed and examined animal spatial behavior in captive animals. Two spatial concepts that emerged from their work are

[34] Oldenburg, "Our Vanishing 'Third Places.'"

territoriality and dominance. The two create a complimentary relationship, as Victor Hugo declares, "'every man a property owner, no one a master.' The implication is that when everyone possesses an individual territory, the reasons for one man to dominate another disappear."[35]

The creation of micro neighborhoods within a residential dwelling suggests the possibility of distinguishing group territories among the residents. It is yet to be determined whether group territories are beneficial or disadvantageous when providing open spaces that are ambiguously assigned to a specific group of households and open to everyone in the residential dwelling. As a whole, a residential dwelling of micro neighborhoods with designated social spaces can cultivate social relationships among residents belonging to different households. If the goal of the residential dwelling is to encourage these group territories to socially intermingle with each other, a hierarchical order of social space needs to be defined.

Another definition of territory is a place where regular users have a sense of intimacy and control. Four types of territories in human societies are distinguished:

1) Public territories, such as courtyards and parks, which provide the public user the freedom of access but not necessarily of action.
2) Home territories, or public areas taken over by groups or individuals such as playgrounds, homosexual bars, or coffee shops.
3) Interactional territories, which are places where social gatherings may occur. They have clearly marked boundaries and rules of access and egress.
4) Body territories, which is another term for personal space. They are the most private spaces that belong to the individual. [36]

A physical element as simple as a house doorbell implies the need for permission to enter another person's territory. While this is applied between a private residential unit and its surrounding space, this type of boundary should be restricted from the boundaries of social

[35] Sommer, *Personal Space: The Behavioral Basis of Design*, 19.
[36] Sommer, Personal Space*: The Behavioral Basis of Design*, 64.

space. To a certain extent, social space should have an ambiguous boundary of territoriality only to promote spatial defense from territorial encroachment.

2.4 IN DEFENSE OF PRIVACY

Robert Sommer defines three forms of territorial encroachment: violation (unwarranted use of territory), invasion by an intruder within the boundaries of the territory, and contamination by people who display a lack of respect and humanity towards the space and the people that use it.[37] These forms of territorial encroachment can affect all four types of territories. The main issue that should be addressed is the possible encroachment of an individual's personal space. In a living environment, it is vital that residents behave cooperatively and in a civil manner with their neighbors in social and semi-private spaces.

While the goal of the social space is to encourage people to engage in social interaction, the possibility of overcrowding can also become an issue. Overcrowding of a space, especially one that is not bounded with physical devices, can be detrimental in the residential setting. This paper will examine how privacy should be maintained within private living units and how adjacent social space can accommodate this.

A social space that becomes uncomfortably overcrowded may result in two reactions: 1) closer proximity may cause accidents such as sudden movements that cause bumped elbows, spilled drinks, and unintentional pushing and 2) cocooning, or "mutual withdrawal from social intercourse."[38] If multiple inhabitants use the space at the same time for different reasons, each individual or grouping will become somewhat territorial over their own space. The social space should be flexible enough to accommodate different activities and subdue varied noise levels. On a small scale, this can be addressed by the quantity of seating and tables and their arrangement within the social space.

A solution to avoid overcrowding in social spaces within the residential environment is to

[37] Ibid.
[38] Sommer, *Personal Space: The Behavioral Basis of Design*, 61.

provide social spaces in proportion to the amount of people who live in the whole dwelling. Accessibility is also important as this will determine which social space one will choose to go to if there is more than one option.

If an inhabitant chooses to occupy a social space by him or herself for an independent activity, s/he may choose the one nearest to his/her apartment. One may approach a space further away with the intention of meeting another person, because it is unoccupied, or because that space holds certain characteristics that are more attractive to them such as external views, lighting, and décor. With this opportunity to choose to enter any social space within the whole residential dwelling, each social space must have no territorial boundary for a specific group of residents.

2.5 THE BENEFITS OF SOCIAL SPACE

While social spaces may trigger negative feelings among neighbors, the integration of social space has overarching benefits that can increase the quality of living in a residential environment. The social space becomes a successful one when people begin to consider it their third place. Ray Oldenburg states that "though [the third place is] a radically different kind of setting for a home, the third place is remarkably similar to a good home in the psychological comfort and support that it extends….they are the heart of a community's vitality."[39]

Joie de vivre, or "Joy in living," is a multi-cultural practice that regards third places as essential as home and work. Third places should be close to where people live and be accessible at the right times.[40]

Third Places Help Unify Neighborhoods

In residential neighborhoods where third places are absent, there is little social interaction between households. It is possible for people to live in the same vicinity for years without

[39] Oldenburg, "Our Vanishing 'Third Places,'" 7.
[40] Ibid.

getting to know each other. Social spaces give residents the option to come out of their private dwellings, meet others in the neighborhood, and create new relationships.

Friendships are often created on "neutral ground" or territory that belongs to neither party. Third places help foster friendships because there is no obligation of hosting a guest or being a guest. They are simply places where people can enjoy each other's company and leave when they feel it is appropriate. "It is a very easy form of human association."[41]

Social Spaces as "Sorting Areas"

Social spaces that become third places act as "sorting areas" for people to meet and find common interests. They promote the habit of association whereby people can connect and potentially develop social relationships with minimal conversation.

A Healthier Lifestyle

Social spaces can promote a healthier lifestyle through the sharing of knowledge on positive lifestyle habits. Once neighbors get to know each other, they can agree to exercise together, shop for healthier food options, and also grow their own food in a communal garden.

Good day lighting and natural ventilation within a space can also encourage people to stay there for an extended amount of time.

"Ports of Entry"

Social spaces can reorganize the layout of public and private space, thus creating a more legible residential environment. Social spaces can also function as nodal points for people to meet while at the same time allowing them to orient themselves around the area. This is especially significant for newcomers and guests of residents who are unfamiliar with the environment.

A Safer Environment

Jane Jacobs describes "public characters" as those who operate third places and social

[41] Oldenburg, "Our Vanishing 'Third Places.'"

spaces. They seem to know everyone in the neighborhood, keep an eye on the local kids, do favors for local customers, and keep regulars up-to-date on all variety of local manners.[42]

Social space offers residents chances to get to know one another, thus contributing to a sense of community and neighborhood identity. A housing block can have guards and cameras, but the most secure building is one in which the residents are acquaintances or friends, and can spot suspicious behavior and strangers.

During emergencies or disasters, social spaces can become gathering points in the case of evacuation. During these events, "people want, and need, to be with other people…to help and support each other, and to decide on courses of action."[43]

Places for Entertainment

Social spaces can become the setting for entertainment. Among other activities, entertainment can be generated through conversation, light-hearted and silly to serious.

[42] Jacobs, The Death and Life of Great American Cities.
[43] Oldenburg, "Our Vanishing 'Third Places."

Pub•lic

1. of, belonging to, or concerning the people as a whole; of or by the community at large, “the public welfare,” “a public outcry”;
2. for the use or benefit of all; esp., supported by government funds, “a public park”;
3. as regards community, rather than private, affairs.[44]

3.1 THE STUDY OF PUBLIC SPACE

People move constantly within a city from different directions, by various modes of transportation, and for an unlimited number of reasons. The public realm is where people have the most freedom of choice. The success of a public space is analyzed based on the human activities that occur within it. By understanding the characteristics of a successful public space, we can begin to understand the characteristics of successful social spaces.

Public space has long been considered an essential component of community. It is ‘the space…where public interaction occurs, where people can meet at their leisure, and where free and open discussion can take place.’ The absence of a public space is a symptom of the absence of community (Gottdiener 1997, p. 139). *Even in urban settings, the preservation of public spaces is considered vital for social exchange and exposure to social diversity*.[45]

Just as public spaces are the essence of community in the public realm, social spaces have the potential to serve a similar function within various building types such as educational, office, retail, and most importantly, residential buildings.

[44] Jodidio, Public: Architecture Now!, 6.7.
[45] Keller, *Community: Pursuing the Dream, Living the Reality,* 163.

3.2 THE FOUR KEY QUALITIES OF PUBLIC SPACE

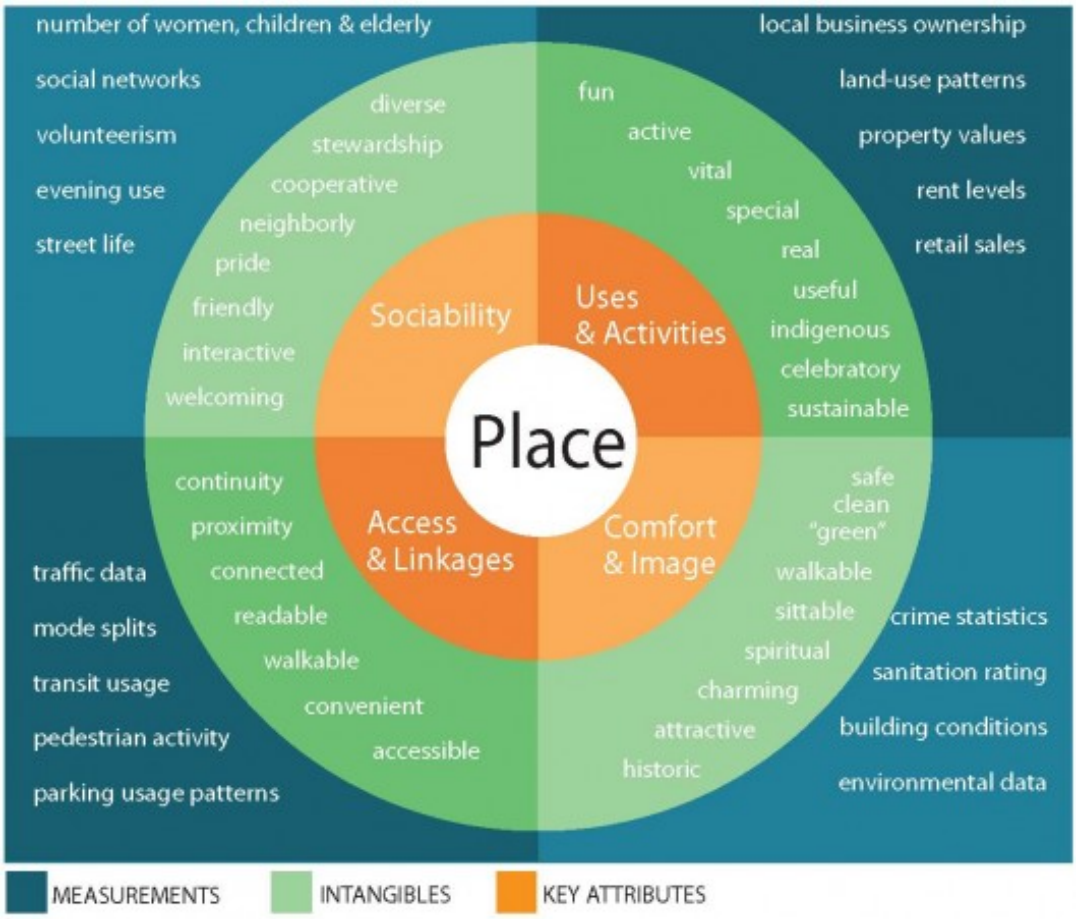

Figure 4 The Place Diagram, created by the Project for Public Spaces (PPS)

The four key qualities of public space defined in the Place Diagram (Figure 4) by Project for Public Spaces will be discussed further in this chapter.

Sociability

The sociability of a space relies on observational studies on how public space becomes a third place for some, and a friendly, welcoming, and interactive environment for people of all ages and backgrounds. The vitality of a public space relies on the interaction through pedestrian activity, which is encouraged through permeable and legible street networks. [46] This quality is most pertinent for a vital public space, although it cannot be attained without

[46] Gehl, *Life Between Buildings: Using Public Space.*

the next three qualities.

Uses and Activities

A public space must have the ability to accommodate the wide array of interests that pedestrians and possible visitors may have. It must appeal to the widest number of users and have the potential to accept a continuously changing and unpredictable range of activities. A public space should promote a variety of activities and offer options to pedestrians that may encourage them to stay in the public for an extended amount of time.

Bryant Park, located in mid-Manhattan of New York City, is a great example of a flexible public space. Figures 5 and 6 are examples of how Bryant Park is utilized for communal events throughout the year. During the spring, summer, and fall seasons, the central space consists of a flat, green lawn that is bounded by the New York Public Library, high-rise hotels, housing, and office buildings. The green lawn can be utilized for a large, outdoor yoga class during the day or as a place for people to watch a movie projected on a large, portable screen in the evening. In the winter, the green lawn is transformed into a skating rink that is open to the public for a small fee. Bryant Park exemplifies the variety of functions a public space can offer throughout the day, during all four seasons.

Figures 5 & 6 Social activities such as yoga (left) and movie night (right) in Bryant Park, New York.

Jan Gehl, a Danish architect and urban design consultant, is focused on improving the quality of life on the street. He defines a “living city” as one that consists of low, closely-spaced buildings that cater to foot traffic over car traffic. A living city contains abundant outdoor spaces and extroverted building envelopes that open towards public spaces at the street level. Gehl collects data considering three different criteria: 1) How many people and

events use the public space, 2) What activity types develop within the public space, and 3) How long these activities last within the public space.[47]

Through extensive observation and studies, Gehl has devised three main categories for social activities that occur on the street or within a public space:

Necessary Activities: school, work, errands, mail. Since these are necessary activities, they are influenced slightly by physical framework.

Optional Activities: pursuits that depend upon favorable exterior conditions. These include activities such as taking a walk to get a breath of fresh air, sitting and sunbathing, and other recreational activities done outdoors. When outdoor conditions are poor, only strictly necessary activities to carry on everyday life occur.

Social Activities: activities dependent on other public spaces, such as children at play, greetings and conversations, communal activities, and most of all, passive contact (simply seeing and hearing other people). Different kinds of social activities occur in different types of places, such as dwellings, private outdoor spaces (gardens and balconies), public buildings, places of work, etc. Gehl terms these activities "resultant" activities. They occur spontaneously, as a direct consequence of people moving about and being in the same spaces.[48]

Access and Linkages

Besides offering a variety of activities within its space, Bryant Park is successful because it is permeable, allowing pedestrian access on three of its four edges along its perimeter. Figure 7 displays an axonometric layout of Bryant Park, which is bounded by the New York Public Library, 41st Street, 42nd Street, and 6th Avenue. The prominent public space bridges Grand Central Station on the east and Times Square on the west for pedestrians. Its physical form and location allows Bryant Park to become legible or easily found by the pedestrian.

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[47] Gehl, *Life Between Buildings: Using Public Space.*
[48] Ibid.

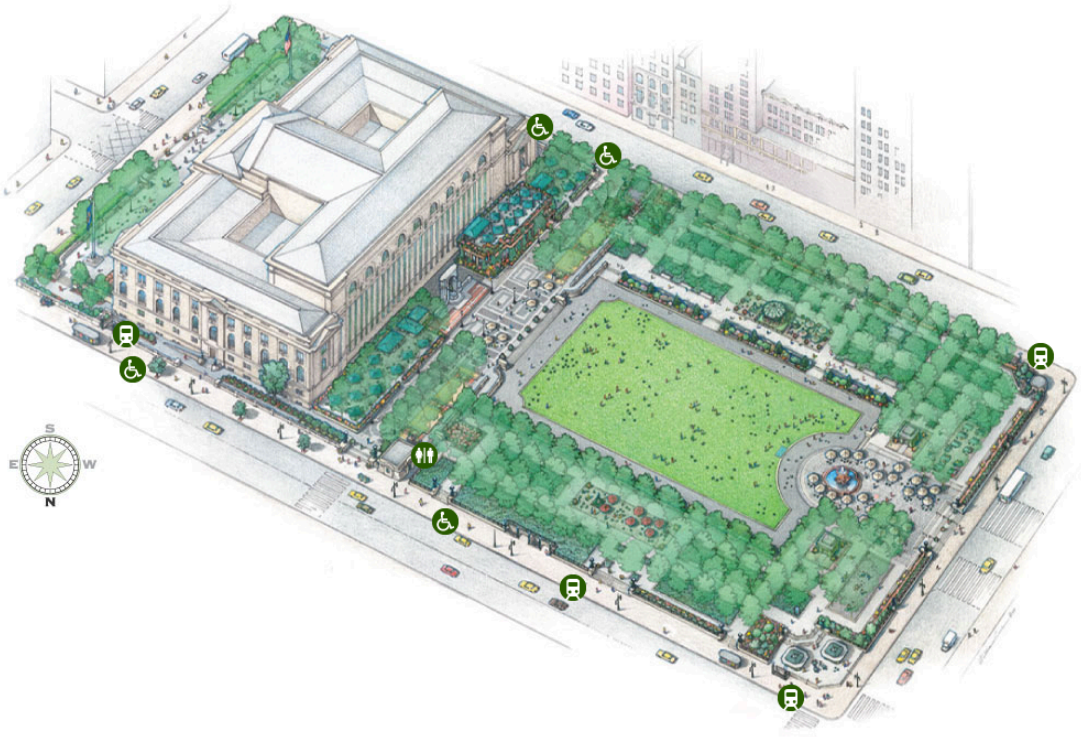

Figure 7 Map sketch of Bryant Park, New York

Places can be identified and understood by their human activity patterns. Some examples are the use of physical landmarks and the vitality generated by active frontages and varieties of uses. Clear and understandable routes also contribute to safety and neighborliness.[49]

Another way that an urban space can become accessible is through its integration with the existing transportation infrastructure of the city. Pioneer Courthouse Square, a public block situated in the heart of Portland, is a transportation hub for Portland's bus and light rail lines. Its central space hosts more than 300 events each year, with approximately 26,000 visitors each day, making it the most visited public space in Portland, Oregon. The public square is filled with temporary public art exhibitions, permanent art sculptures, an information center for Portland's TriMet transportation system, food vendors, and coffee shops. [50]

[49] Lewis, *Front to Back: A Design Agenda for Urban Housing*, 42.
[50] Pioneer Courthouse Square. "History."


Figures 8 & 9 Pioneer Courthouse Square in Portland, Oregon

Comfort and Image

Whether social spaces are used for conversation, meals, reading, waiting, or contemplating, people are attracted to places with seating furniture. Bryant Park is known for its iconic green chairs. The public space offers approximately 2,000 individual and moveable chairs with round tables. In the late 1980's, the management of Bryant Park requested consultation from William Whyte, who advised the amenity of moveable chairs for its planned re-opening in 1992.[51]

In his book, *The Social Life of Small Urban Spaces*, Whyte states that "chairs enlarge choice: to move into the sun, out of it, make room for groups, move away from them. The possibility of choice is as important as the exercise of it. If you know you can move if you want to, you feel more comfortable staying put."[52]

Pioneer Courthouse Square was sculpted as a recessed public space to fit into the topography of the site. The steps leading to the flat, central space used for art exhibitions also function as an integrated seating space in curvilinear forms to accommodate multiple social groupings. The appealing design gives pedestrians various options for seating that provides different views of the public square. Though the options are not as unlimited as those found in Bryant Park, the integrated seating is much more flexible than installed benches and ledges.

[51] Bryant Park Blog: "Bryant Park's Choice Seating."
[52] Whyte, *The Social Life of Small Urban Spaces*, 34.

William Whyte emphasizes the need for physical amenities to create a successful public space and mentions that cities overspend on creating lousy spaces by adding elements such as railings and high ledges. “Ideally, sitting should be physically comfortable – benches with backrests, well-contoured chairs. It’s more important, however, that it be socially comfortable. This means choice: sitting up front, in back, to the side, in the sun, in the shade, in groups, off alone.”[53]

The High Line in New York City exemplifies various qualities of a successful public space. The High Line was built in the 1930’s as a freight train track to transport goods 30 feet about the street as part of a massive public-private infrastructure project called the West Side Improvement. The High Line has not been used since 1980, and in 1999, it was under threat of demolition. A community-based, non-profit organization worked together to preserve the historical structure and transform it into an elevated public park.

The High Line is a historical landmark in what is now known as the Meatpacking District. The design retains various parts of the original structure, such as portions of the rail track, as a way of remembering the story behind the new public park. The opening of the elevated park was sectioned into three phases, with its first opening on July 9, 2009 and its second on June 8, 2011.[54]

[53] Whyte, The Social Life of Small Urban Spaces, 35.
[54] The High Line. “History.”

Figures 10 & 11 The New York High Line in aerial view (left) and rendered perspective (right)

The High Line also offers a variety of seating amenities, from benches that seemingly extrude from the wooden pathways to moveable wooden lounge chairs. These lounge chairs are installed yet offer flexibility for the user. Each unit is proportioned for one person. If a visitor who is alone chooses to use one, he can slide it far enough to separate from the adjacent lounge chairs. A group of two or more people can slide the lounge chairs together to be closer to one another. While the High Line retains the historical quality of the public space, it offers enough amenities for users to use the space for a longer length of time. Views of New York City's skyline are provided on the east, and views of the Hudson River and New Jersey beyond are provided on the west.

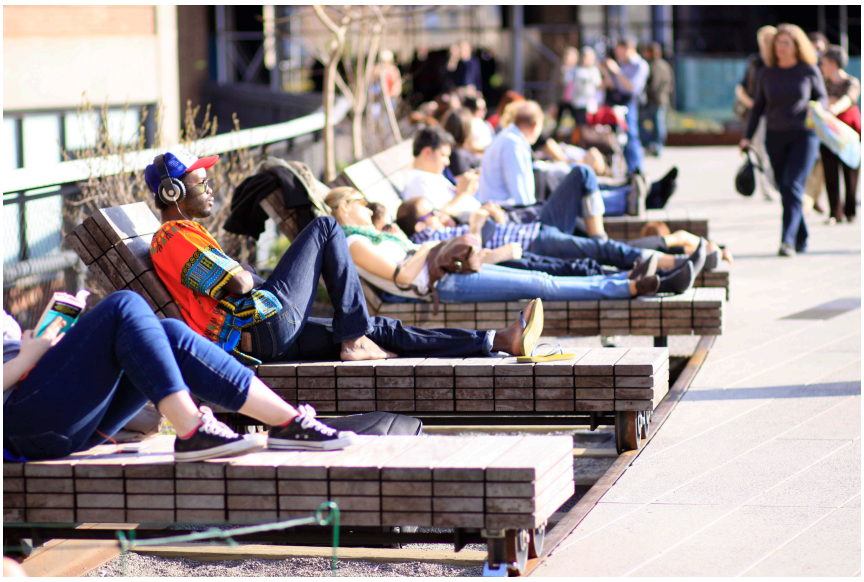

Figure 12 Seating furniture on the New York High Line

3.3 PRIVATELY OWNED PUBLIC OPEN SPACES (POPOS)

In the last decade, the idea of publicly owned private open spaces, or POPOS, has become a growing trend that is prominent in New York City. By providing an amenity space for public use in a development, or "bonus plazas," the developer can retrieve additional floor area in exchange. The POPOS is a privately owned space that is accessible for public use during certain times of the day and possibly for a fee. The POPOS can exhibit similar physical qualities as a true public space but poses limitations for public use. They are intended to provide light, air, and green space to ease the "hard-scaped" character of the city's densest areas."[55]

The design principles for POPOS written by the New York City Department of City Planning are listed on its website. They are similar to the public space principles provided by the Project for Public Spaces.

[55] New York City Department of City Planning. "A Primer for Public Plazas."

Public Plaza Design Principles

Open and inviting at the sidewalk

- Easily seen and read as open to the public
- Conveys openness through low design elements and generous paths leading into the plaza
- Visually interesting and contains seating

Accessibility

- Enhances pedestrian circulation
- Located at the same elevation as the sidewalk

Provides sense of safety and security

- Contains easily accessible paths for ingress and egress
- Oriented and visually connected to the street
- Well-lit

Provides places to sit

- Offers a variety of well-designed, comfortable seating for small groups and individuals.[56]

3.4 LESSONS LEARNED FROM PUBLIC SPACES AND STREET LIFE

The physical framework is the number one factor in facilitating outdoor activities. Urban spaces need to be able to physically accommodate people, especially if the designer intends to create a vital space in an area with high foot traffic. Simple physical alterations such as the layout or shape of the space, amount and types of sittable space, and amount of shade given by structures and trees will increase comfort and therefore the suitability for social activities.

[56] New York City Department of City Planning. “A Primer for Public Plazas.”

"Life between buildings," as Gehl defines it, is the "entire spectrum of activities, which combine to make communal spaces in cities and residential areas meaningful and attractive." [57] The need for contact, using the human senses of sight and hearing, results in social activities with a range of emotional intensity, from simple and noncommittal to complex and emotionally-involved. "Being among others, seeing and hearing others, receiving impulses from others, imply positive experiences, alternatives to being alone. One is not necessarily with a specific person, but one is, nevertheless, with others." Gehl concludes that generally, people are attracted to other people.[58]

The life of a space relies on the people that use it. Through observations and research, Gehl concluded that street quality is directly related to street activity. If the qualities of outdoor spaces are enhanced to adapt to more users, more street life will naturally be attracted to these spaces.

[57] Gehl, *Life Between Buildings*.
[58] Ibid.

Most residential areas built since World War II have been designed to protect people from community rather than connect them to it.

– Ray Oldenburg[59]

4.1 URBANIZATION AROUND THE WORLD

In 2007, *The New York Times* stated, "by next year, more than half the world's population, or about 3.3 billion people, will live in towns and cities, a number expected to swell to almost 5 billion by 2030, according to a United Nations Population Fund report."[60] In the UN report, "State of the World Population 2007: Unleashing the Potential of Urban Growth," author George Martin states that the quick surge of urban populations in inner cities is "unstoppable." It is predicted that most of the world's population growth will occur not in large mega-cities such as Seoul, Mexico City, and Hong Kong, but in smaller cities and towns. Mega-cities today account for only 9% of the urban population, while smaller cities and towns account for more than 50%.[61]

Figure 13 illustrates the top ten countries as of 2008 in which the majority of the population lived in the country's largest city. City-states Hong Kong and Singapore contain 100% of their populations, while in the United States, 8% of the population lives in its largest city, New York City. The first great wave of urbanization happened between 1750 to 1950 in Europe and North America. In these regions, population grew from 15 million to 423 million. In the developing world, the second wave of will consist of a growth to 3.9 billion people living in urban areas in 2030, and by this time, the developing world will have 80% of the world's population.[62]

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[59] Oldenburg, "Our Vanishing 'Third Places."
[60] Dugger, "Half the World's Population will live in cities next year, UN report says."
[61] Ibid.
[62] Ibid.

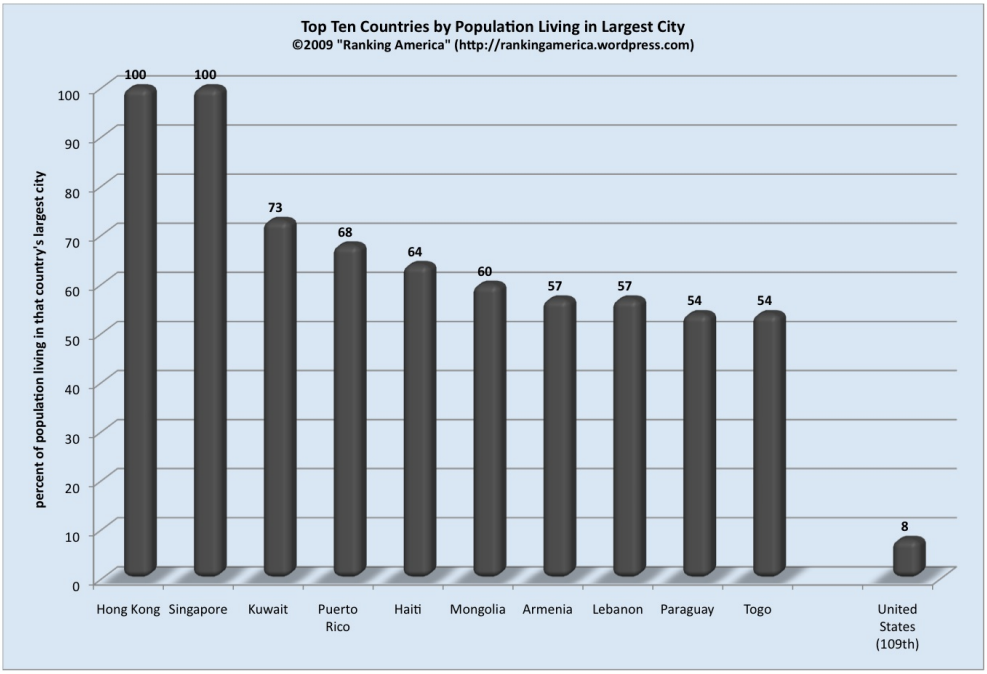

Figure 13 Top Ten Countries by Population Living in its Largest City

High population densities in cities are becoming more acceptable to urban societies in North America and Europe that no longer find the ownership of an individual, suburban home a necessity. Still, western ideas of acceptable urban densities are at a much smaller scale than what is seen in mega-cities in Asia. In Europe, Paris maintains the highest population density of 7,793 people per square kilometer, while in America, New York maintains 4,432 people per square kilometer. These numbers are only fractions of a few mega-cities in Asia: Taipei at 18,732 people per square kilometer, Bangkok at 22,540 people per square kilometer, and Hong Kong with a booming 95,560 people per square kilometer. These numbers become visually apparent in each city's unique skyline of high rises. In Shanghai, China, for example, many of the prominent high rises that make up its infamous skyline are not only corporate buildings, but also residential high rises.[63]

[63] French, *New Urban Housing.* 20.

4.2 GROWTH OF VERTICAL URBANISM

"Vertical urbanism" is a means of solving spatial constraints in inner cities. As space becomes limited on the ground plane due to density, building upwards through mid-rise and high-rise buildings adds density in a vertical manner.

Aldo Rossi states, “The City has always been characterized largely by the individual dwelling. It can be said that cities in which the residential aspect was not present do not exist or have not existed.[64] He proposes that the individual’s relationship to his or her living environment influences the identity of a city. Without a residential program, a city is not a city.

4.3 VERTICAL URBANISM AND ITS EFFECTS ON URBAN HOUSING

In his proposal for the Sky Court concept in high-rise buildings, Jason Pomeroy stated, “if the population is to increase at the rate predicted by demographers and statistics illustrate a migration to inner city centers, densities will increase. This will create a potential loss of open space that is much needed for health, recreation and amenity for civil society.”[65] Similarly, Ray Oldenburg stated that “Such embers of human association signal the flaw in much of today’s residential land use pattern – all space is used up and there’s no provision for a community life. What should be local is remote, and because it is remote it serves no community at all.”[66]

Families and professional individuals are moving into city centers in search of a different lifestyle or to pursue personal goals. This is seen in the range of household types in city dwellings. Their daily commute becomes simplified by the availability of existing transportation infrastructure and closer proximity to work, school, and basic services. While their lifestyle changes drastically, their spatial needs also change from the rural to the urban

[64] Rossi, *The Architecture of the City*, 70.
[65] Pomeroy, *The Sky Court*, 16.
[66] Oldenburg, “Our Vanishing ‘Third Places,’” 6.

setting.

A rapid move into city centers can have a negative physiological effect on individuals. When moving from the suburbs to the city centers, people must sacrifice personal space. They must adapt to a lifestyle that is less private and faster-paced. With limited personal space available, they must compete for territory within a high-density living environment. “The typical high-rise as a living environment has a devastating effect on the well-being of its residents.”[67]

The development of apartment buildings was a combined result of increased urban population, land shortage, and the concentration of urban housing. High-density urban dwellings are designed to save space and money, and to avoid complications in the construction process. Due to the high cost and construction requirements for high-rise apartment buildings, there has been controversy over their viability in maintaining human quality of life.

While cities boomed with new apartment high-rises and large housing complexes, the factory-like production of these buildings neglected space planning for social behavior. Instead, floor plans were designed so that inhabitants could go from point A (street) to point B (apartment unit) without any “in-between” opportunity to socialize with their neigbors.

In areas where many low-density urban dwellings were constructed, the outdoor environment is an important design factor. In these types of developments, green open space is relatively more abundant than in high-density urban dwellings. They thus present inhabitants with a pleasant place for social interaction.

As technology advances and provides more cost-efficient solutions to high-rise construction, architects are becoming more daring in residential design and in their efforts to give future occupants similar opportunities to those in single-family homes: a front yard, a backyard, and communal spaces for social activities. The neighborhood-like feeling is

[67] Mehrabian, *Public Places and Private Spaces: The Psychology of Work, Play, and Living Environments*, 119.

becoming a greater priority in new, tall urban dwellings.

The following chapter studies the anatomy of private and public spaces within the typical household. By understanding the way social spaces are enhanced within the private dwelling unit, one can understand how the layout of the dwelling unit can correspond to the semi-private social spaces directly outside of it.

CHAPTER V
SOCIAL SPACE WITHIN THE HOUSEHOLD

5.1 INTRODUCTION

Residential housing designs driven by cost have resulted in standard, well-defined formulas or “cookie cutter” housing designs. Every conventional apartment unit is predictable, and individuals have learned to adhere to these dwelling types, too comfortable to have an open mind towards a more flexible housing prototype.

As a result of their inflexibility, our present environments fail to meet our emotional needs most of the time. The high population densities of the future will necessitate technological innovation to impart variation, individuality, and some degree of personalized feeling to the interior space of each home. Even when such variation and flexibility are available, some individuals rigidly adhere to prescribed norms and seek guidelines from authoritative figures or groups. However, this should not prevent others from creating interior environments suited to their particular needs.[68]

The layout of the urban dwelling should depend on the lifestyle habits of its users. If the dwelling was previously built, or was previously owned, the new family/household will choose its new living space depending on their spatial needs, lifestyle choices, and social habits. A family that chooses to build a new home will also design accordingly. When designing social space in an urban habitat for multiple families and households, an architect cannot assume that all inhabitants have the same spatial needs, lifestyle choices, and social habits. An urban dwelling that aims for more social activity among its users cannot force interaction and give the same levels of privacy and exposure; rather, it should give users a variety of options to fit their individual preferences.

A larger social space can trigger more interaction and friendliness between families and households. First and foremost, social interaction stems from the “socializing core” within

[68] Mehrabian, *Public Places and Private Spaces: The Psychology of Work, Play, and Living Environments*, 100-101.

each living unit. The level of social activity among the inhabitants is dependent on the spatial quality of the living spaces.

The homes most of us are forced to buy or rent, however, are usually built and decorated in accordance with economic considerations and established traditions rather than with serious attention to the emotional impact of the various rooms. They are often rather poorly laid out, consisting basically of a series of rectangular boxes connected by doors of varying widths. If the house is a large two-story structure, the boxes on the first floor are the "socializing" areas like dining room, family room, kitchen, living room, and possibly a den or a library, with the second-floor boxes usually given over to bedrooms and large bathrooms.[69]

The flow from one space into another is very important in the household. Traditionally, rooms that are used for low-load activities are placed next to each other, while areas of high-load activities are also adjacent to one another. Low-load spaces include bedrooms, bathrooms, and a study room. High-load spaces include the dining room, kitchen, family room, and living room. The areas of focus for this dissertation will be mainly on high-load spaces, where social interaction will occur naturally among family members and guests.

Due to the nature of an apartment floor layout, a unit with limited windows gives the high-load spaces and the bedrooms priority for sun exposure. Bedrooms almost always have a window connecting to the outdoors. The "socializing core" commonly consisting of the living room-kitchen-family room will have the greatest perimeter length of windows. These rooms are never completely separated from each other by walls; their thresholds can be as ambiguous as a freestanding wall, counter, or nothing at all.

The kitchen forms the natural "heart" of the home. Just as the human heart pumps blood to the rest of the body and back to the heart, people enter the kitchen throughout the day in order to sustain their daily activities with food and beverage. "In a servant-less household, whoever does the cooking is the crucial person and cannot be isolated, since his or her activities tend to form the center of gravity. In addition, the kitchen is the source

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[69] Mehrabian, *Public Places and Private Spaces: The Psychology of Work, Play, and Living Environments*, 83.

of certain elemental blessings –food in the refrigerator, a glass of water, ice cubes, or an ice-cold beer…people have many reasons for gravitating toward the kitchen."[70]

Therefore, the kitchen is the main driver for social interaction within the "socializing core." If possible, the kitchen should be placed centrally within the other components of the socializing core – the living areas where the family eats, watches TV, and entertains. A central kitchen enhances the human flow between spaces by reducing blockage when people enter and exit the kitchen.

Since the living room-kitchen-family room core is the most utilized space for socializing, it should be pleasant and have the most stimulating views of the outdoors. The core should also be well ventilated and have good uniform lighting throughout. The interiors should be attractive (the term "attractive" should not be correlated with the term "expensive") and livable. Seating spaces should be arranged to assist in conversations. There are an unlimited number of options to create the threshold between the "socializing core" and the exterior. Conventionally, a mere window or balcony will do the trick. This research paper will experiment with the possibilities of creatively applying "semi-private" space to separate the private interior and public exterior while triggering social relationships outside of the household.

5.2 CREATING A "PLEASANT" ENVIRONMENT

The ability to create a "pleasant," or positive environment begins with the responses of the people that live and move within it. Lighting is the most pertinent factor in creating a pleasant environment. The socializing core must be evenly and brightly lit, and should take advantage of natural daylight. For a household that loves to entertain guests and hold parties, the ability to vary the intensity of lighting is crucial to maintain a positive environment. This can be done through curtains and louvered shades during the day and dimmer appliances for electrical lighting at night. The envelope design can take advantage of the sun path, creating pleasant and dynamic light and shade patterns in the space

[70] Mehrabian, *Public Places and Private Spaces: The Psychology of Work, Play, and Living Environments*, 85.

throughout the day.

The use of color can also be an effective tool. Playful, colorful areas, tapestries, or large paintings can be used in the socializing core, and can also be spotlighted for enhancement. The use of colored light is effective but should be applied carefully. “Colored lights also have the effect of changing the hue of familiar objects, making them look incongruous or strange, thus increasing their novelty. Such effects should be used only when very high levels of arousal are wanted.”

The use of color can produce various emotional responses. Color is characterized by hue, brightness, and saturation. Hue is related to the wavelength, which determines whether colors are perceived as red, blue, green, etc. on the color spectrum. The brightness refers to the intensity of light that is reflected, and saturation is the concentration or vividness of the hue. The brighter or more saturated the color, the more pleasant it is. The most pleasant hues are blue, green, purple, red, and yellow, in that order. In terms of arousal, less bright and more saturated colors are more arousing. The most arousing hue is red, followed by orange, yellow, violet, blue, and green, with green being the least arousing.”[71]

Colors can also be used for therapeutic purposes. If a dweller prone to depression lives alone, more arousing colors can be used to lessen his/her levels of depression. This can also compensate for the dweller’s lack of enthusiasm when guests are present in their space. If used correctly, color can enliven the socializing core while saving the user a lot of money. Interior designers play with color to visually alter the shape of the space. For example, opposite walls are painted darker and lighter shades of the same color to make a narrow room seem wider.

Room arrangements can also contribute to the success or failure of a socializing space. The seating arrangement and its relationship to the room size and shape can affect the arousal levels of the space. Few seating options in a living room can make a room feel oversized. Too much seating furniture in a tighter space can constrain the flow of

[71] Mehrabian, *Public Places and Private Spaces: The Psychology of Work, Play, and Living Environments*, 89-90.

movement and make a room feel small.

Concentrated socializing spaces defined by seating need to be arranged so that participants in a conversation can see and hear each other. Introducing too much distance and using long couches prevents people from facing each other, and therefore reduces the chance for conversation. Too little distance (less than 4 feet apart) especially for two strangers can trigger sensitivity, tension, and avoidance behavior. For acquaintances, friends, and family, this distance can trigger intimate conversations. "When the angle through which people are turned away from each other exceeds 90 degrees, the effectiveness of the conversation is curtailed sharply. Since people seated together on a couch are in effect separated by a 180 degree angle, couches are detrimental to social interaction."[72]

Long couches (for three or more people) are only effective for close acquaintances. They are less effective for strangers as it is likely that two people will use it, sitting at opposite ends of the couch. Long couches should also be combined with individual chairs in a social grouping. Within a large socializing core, it is more effective to have hierarchical groupings than one large one. Therefore, seating arrangements depend on the users and the functions of the social space.

Spaces with objects of novelty heighten the arousal of a space. Objects of novelty are flexible, movable, and dynamic. They give a sense of "newness" to users and passersby. Examples of novelty objects are moveable furnishings that are light and can be rearranged, and dynamic objects such as aquariums, mobile sculptures, fireplaces, and most importantly, plants. "Potted plants and flowers not only contribute heavily to the pleasure dimension but add complexity and novelty through their changing shapes…the different green shades provided by plants contrast sharply, especially with the now fashionable white walls."[73]

The application of water has proven to offer both physiological and environmental benefits.

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[72] Mehrabian, *Public Places and Private Spaces: The Psychology of Work, Play, and Living Environments*, 93.
[73] Mehrabian, *Public Places and Private Spaces: The Psychology of Work, Play, and Living Environments*, 88.

The evaporation of water can be a source of cooling in addition to natural ventilation. Historically, water features have been used to cool homes in hotter climates. “The Moors in southern Spain and the Mogul emperors in India frequently built pools and water carrying channels into the interior areas and courtyards of their homes. A large room would contain a small, elevated pool and fountain at the center. The overflow from the pool ran into small rectangular channels, approximately six inches wide and two inches deep, which were constructed in such a way as to let the excess water runoff either toward other rooms or toward a court area. As this water evaporated it absorbed heat and thus acted as a cooling device.”[74]

On a physiological level, the visual and sound cues of a water feature such as the splashes of a fountain or the reflections of water on the roof interior can be pleasant and stimulating. Though maintenance costs may be a factor, small electric pumps allow water to be recycled at a fraction of the energy costs required by room or central air conditioning.

5.3 SPATIAL AMBIGUITY

The concept of multipurpose spaces stems from the layout of a traditional Japanese home. The difference between a traditional Japanese home and a traditional western home can be seen in how well-defined each room is within the household. Which housing type uses space more efficiently?

Like any dense city center, Japan lands towards the higher end of the spectrum of cost per square foot. The cost of living in Japan is extremely high; therefore, a typical middle-income household in Tokyo will have a very tiny apartment in comparison to a typical suburban home on its outskirts. Much of the Japanese population has adjusted comfortably to living in small apartments because of the influence of the traditional Japanese home layout. The program is very flexible. There is no well-defined room as in typical western housing. Besides the entrance, or *genkan*, kitchen, bathroom, and toilet, any room can be a living room, dining room, study room, or bedroom.

[74] Mehrabian, *Public Places and Private Spaces: The Psychology of Work, Play, and Living Environments*, 102.

The furniture is portable, stored in the *oshiire*, a large closet. The living space (a traditional home normally has one), *i-ma*, is a room that can be changed by altering the partitions. In a typical traditional house, the *i-ma* is usually the room that sits under the roof, while the kitchen, bathroom, and toilet are extensions on the sides of the house. The floor space of the *i-ma* is measured by the number of *tatami*, traditional woven mats made of straw and rice that are standardized at 180 cm x 90 cm in size). *Roka* are floored passageways similar to hallways that are partitioned by *shoji,* sliding and portable doors that are also made from wood. *Shoji* are very thin so that light can pass through into the house. The partitions are created by *fusuma*, sliding doors made from wood and paper. They are portable and easily removed.

Figure 14 *I-ma*, or the living space, divided up by *tatami* units

The rooms can be readjusted depending on the activities that go on in the household. For large gatherings, the partitions can be removed to create one large room while on a typical day the partitions can be used to create much smaller, privatized living spaces.[75] "Depending on the given conditions, the program of walls and openings, installations and surfaces for movement, fittings and functional places designed by the architect, will be set relatively freely into this homogeneously conceived space."[76]

[75] Wikipedia, "Housing in Japan."
[76] Egenter, "The Japanese House: Or, why the Western architect has difficulties to understand it."

Figure 15 *Shoji* panels in varying opacities

The concept of flexible space and spatial ambiguity can be borrowed from the traditional Japanese home when designing an urban dwelling. Multipurpose space is critical, especially for urban housing that seeks to be cost-efficient. The combination of a flexible socializing core within the urban dwelling can result in new urban housing prototypes, which will minimize wasted space in an already-limited floor plan. The next step is to research various methods in which the socializing core can extend toward the edges of the home, allowing social interaction to spread from within the household into the neighboring community.

5.4 SEMI-PRIVATE SPACE

Semi-private space is a tricky spatial concept in the household. With the use of solid walls and doors, spaces seem to be either completely public (in the socializing core) or completely private (in a bedroom or bathroom). In this dissertation, “semi-private” space is defined as an area where a user can have a certain level of privacy for an activity such as doing homework, paperwork, or making a phone call. Simultaneously, that same user has visual and audible access to other activities happening in the same room. This type of access is not available between rooms separated by solid walls and doors. A semi-private space is physically connected with the main space and enables one to flow in and out

easily while there exists an ambiguous threshold that disconnects it from the main space. A fixed example of this is a kitchen counter that is waist-high; it can be used on both sides and allows users to maintain visual connection. A dynamic example is the Japanese *shoji* partition, which can be slid or removed depending on the social activity of the room.

A successful social core allows more than one type of activity to occur. The children could be playing video games on the television while the parents do paperwork on the dining table. A college student can multitask, doing homework while watching the football game the rest of her roommates are watching from the couch in the same room. As mentioned earlier, socializing cores should have more than one social grouping defined by furniture. Molding intricate and organic living spaces into hierarchical spaces, such as the living room and an alcove, can offer differing degrees of privacy. The alcove can be open or enclosed for more privacy with partitions, creating a flexible space.

An alcove can also be designed in a vertical manner. An area can be defined by elevation. A depressed space, which is entered by going a few steps down, allows for more private, hidden conversation. A raised space, like a stage, can also provide a conversation grouping that may draw more attention from passersby compared to a depressed space. The physical shape of the space can also influence the delight of the space. The use of curves along the edges of an alcove versus rectilinear edges could provide a more interesting, attractive socializing node.

5.5 SOCIAL OPPORTUNITIES IN THE URBAN DWELLING

Semi-private space between the apartment unit and public circulation space is also a challenge that will be tested in this dissertation. “How to provide people with apartments that strike an acceptable balance between needed privacy and lowered arousal on the one hand, and needed social interaction and stimulation on the other, is *the* design problem confronting architects, decorators, and social scientists. Underlying the paradox of privacy versus social interaction is the phenomenon of territoriality.”[77] High-load urban

[77] Mehrabian, *Public Places and Private Spaces: The Psychology of Work, Play, and Living Environments*, 107.

environments, which include crowds, noise, pollution, and a generally hectic pace of life, contribute to the personal need for privacy. Overcrowding leads to territorial behavior.

If an incoming occupant is new to the area and moves into a “pancaked” apartment with elevators opening up to narrow corridors,

He is not likely to strike up an acquaintance with anyone in that building, not even with people in the adjacent apartments. The opportunities for seeing other tenants are limited, and the corridors, which are usually drably low-load, are not conducive to socializing even if an opportunity should present itself. In such apartment buildings, people usually only get to know and like each other if they happen to get stranded in an elevator which has gotten stuck between floors, or if they complain personally about the noise next door and then decide to join the party rather than fight it.[78]

The path from the building entrance to the apartment unit is unmemorable. There are seemingly endless corridors with “mirror-image, identical doors leading into identical rooms”[79] with the few exceptions of the elevators, fire stairs and mechanical rooms.

The next step for this dissertation is to find design solutions that will extend the idea of social space to the public realm – this can happen in varying degrees – to create a diversified, sociable atmosphere that can cater towards a wider range of individuals in an urban dwelling.

5.6 AREAS THAT CAN BE MODIFIED FOR SOCIAL SPACE

The most efficient way to apply sociable spaces in an urban dwelling is to search for spaces in a standardized building floor plan that can be enhanced for sociable interactions. The mailroom and laundry room, for example, are areas that are typically desolate as people try to avoid staying there for long periods of time. These rooms can be enhanced to

[78] Mehrabian, Public Places and Private Spaces: The Psychology of Work, Play, and Living Environments, 111.
[79] Ibid.

become social spaces, where one can feel comfortable enough to stay there for a longer period of time and possibly socialize with neighbors who happen to enter at the same moment. While waiting for the laundry to finish, members from two different households can join in conversation until their laundry is ready, and the same two people can plan to meet and do their laundry together the next time around.

The number of apartment units per floor plays an important factor in creating an ideal, sociable space on each floor. The ratio of units per floor can break down the overwhelming scale of the building into smaller "micro neighborhoods." This concept can also be applied at the larger scale. "Studies have shown that if the number of apartments on a floor is limited to six, dramatic changes in resident behavior result. The corridor suddenly becomes a common space, which residents can identify as being partly theirs and for which they are inclined to take some responsibility. They become friendlier with the other persons or families on the floor and so also begin to look after each other's property. As a result, the crime rate drops significantly in buildings having no more than six apartments per floor."[80]

With this scale in mind, residents would then be able to manage their own floors if they wish to, not needing janitors to clean up the corridors. The common areas could also be personalized with displays of personal items, like plants and prints, or a shared bulletin board. Doing so will let residents take pride in their common spaces.

Though visual appearance is vital for an appealing, pleasant social space, it is also important to maintain sound barriers between rooms and between units. Soundproofing walls should be placed where needed, so that disruption can be avoided and neighbors won't feel resentful toward each other. Visual privacy can be flexible with the use of shades, curtains, and doors; but sound privacy should always be maintained. The sound of a phone conversation, argument, loud television, doorbells, and crying children should be concealed at any time of the day.

[80] Mehrabian, *Public Places and Private Spaces: The Psychology of Work, Play, and Living Environments*, 122.

CHAPTER VI
CREATING THE MICRO NEIGHBORHOOD

6.1 DEFINITION OF MICRO NEIGHBORHOOD

The micro neighborhood is a cluster of units that work cohesively to make a whole. Aristotle's principle that "the whole is greater than the sum of its parts"[81] can be directly related to community development in residential environments. This research paper proposes that the integration of social spaces in residential dwellings can create micro communities, in turn catalyzing more social relationships among neighbors than what is found in existing dense residential developments today.

6.2 MICRO NEIGHBORHOOD AS TOOL FOR COMMUNITY LIFE

Today, the micro neighborhood concept can be found in gentrified districts throughout the boroughs of New York City. The clusters of micro neighborhoods in Greenwich Village on the lower west side of Manhattan are becoming more apparent and can be found in groups as small as three blocks containing row houses, lined trees, and street front retail. Interestingly, while other Manhattan villages such as SoHo, the Lower East Side, and the Meatpacking District have names based on their locations, their actual boundaries of these districts are defined based on the retail shops that line the street fronts.[82]

[81] The Literature Network, "Aristotle."
[82] Thompson, "The Rise of the Micro Neighborhood."

Figure 16 Micro neighborhoods in New York. Clockwise from top left: Ralph Lauren Women's, Sept 2003; Ralph Lauren Men's, April 2004; Intermix, May 2004; Robert Marc, June 2004.

Though there is much more to the story behind gentrification in New York City, this knowledge supports the idea that micro neighborhoods within Manhattan are separated and identified by their substance and unique characteristics. The residents within each micro neighborhood in a residential urban dwelling have the ability to express themselves in a similar manner. Therefore, the physical interface of each micro neighborhood within a residential dwelling can be unique. This can be highlighted by what is displayed on each household's door front and the décor of the social space that is centered on each micro neighborhood.

Small personal expressions on home exteriors can give neighbors a glimpse of a family's likes and personalities. Doing so can break the monotony of an apartment corridor and result in a vibrant, appealing promenade of house fronts. A resident can pass a neighbor's front door and later trigger social interaction through simple compliments such as, "I like the plants that you at your doorstep" or questions such as, "Where did you get your décor from?"

Communities or social groupings can also form with people who live in different areas of a

residential complex, especially if they find that they have similar hobbies and commonalities. As depicted in Figure 17, people who use a rooftop garden on a routine basis can form relationships with other people who also love to do home gardening. Due to their common interests and the fact that they are most likely to see each other here, they can form and develop neighborly relationships and also sync their daily routines of rooftop gardening.

Figure 17 Urban farming on the rooftop of Glide Memorial Church in San Francisco, CA

6.3 VERNACULAR ARCHITECTURAL PRECEDENTS

This research paper briefly studies Malay vernacular architecture to understand how social relationships are made through the use of the *anjung,* a semi-open space connected to the home yet open to the public street. Through correlational studies, Jan Gehl found that the *anjung* concept is also seen across the globe in the vernacular architecture in Copenhagen, Denmark.

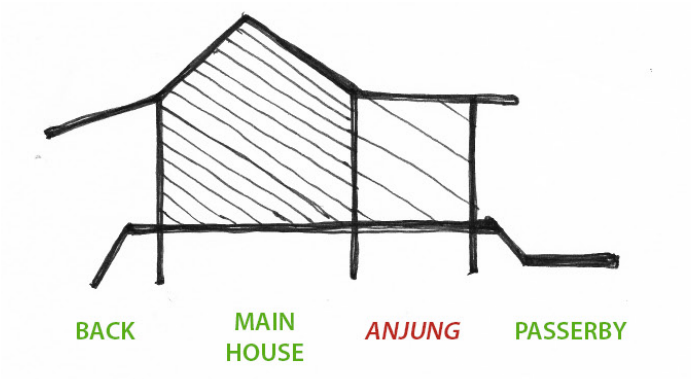


Figure 18 Diagram section of a typical Malay village home

In Malaysia, it is typical to have an *anjung* that functions as a transitional semi-open space attached to the private home but open towards the public street. Here, inhabitants are given the opportunity to interact with passersby in the village. Essentially, the *anjung* functions similarly to the American front yard that becomes semi-public mainly through its visual exposure from the public street. While occupying the *anjung* space, a resident can socialize with neighbors who are walking around the village without leaving his or her own home.[83]

[83] Bay and Ong, *Tropical Sustainable Architecture: Social and Environmental Dimensions*.

Figure 19 & 20 *Anjung* spaces in Malay village homes

In a correlation study from *Life Between Buildings*, Jan Gehl compared two neighborhoods south of Copenhagen – Galgebakken and Hyldespjaeldet – and the amount of social activity that occurred on their streets. At the time, both areas were inhabited by comparable groups of people. Spatially, Galgebakken had a large number of front yards while Hyldespjaeldet had double the amount of backyards but no front yards. The study took place on Saturdays during the summer months of 1980 and 1981. Galgebakken had 35% more outdoor activities occurring on the streets than Hyldespjaeldet. Gehl concluded that this experiment enforced the theory that people are attracted to other people. If given the option to relax in the front yard or backyard, the front yard would be most likely chosen because people would rather relax where other social activities exist. Not only that, but the front yard acts as a transition space where residents can maintain privacy but can still interact with other people in the public realm.[84]

Forecourts are open areas in front of an entrance which can be used to integrate plants and gardening in open areas while creating a unique community and identity. “Residents with more plants in their forecourts tend to know more neighbors, and have a higher sense of community, belonging and security.”[85] The reasoning for this is that the activity of tending plants is rather relaxing, and time spent doing so allows tenants to interact with their

[84] Gehl, *Life Between Buildings: Using Public Space.*
[85] Bay and Ong, *Tropical Sustainable Architecture: Social and Environmental Dimensions.*

neighbors. Plants can also “afford vivid colors, fresh air and psychological pleasure for the residents…[and] thus contribute to improving the environment for socializing.” Therefore, spatially, it is best to have wider corridors to accommodate plants. Forecourts also require multi-level visibility to increase security.

6.4 BREATHING ARCHITECTURE: ENVIRONMENTAL BENEFITS

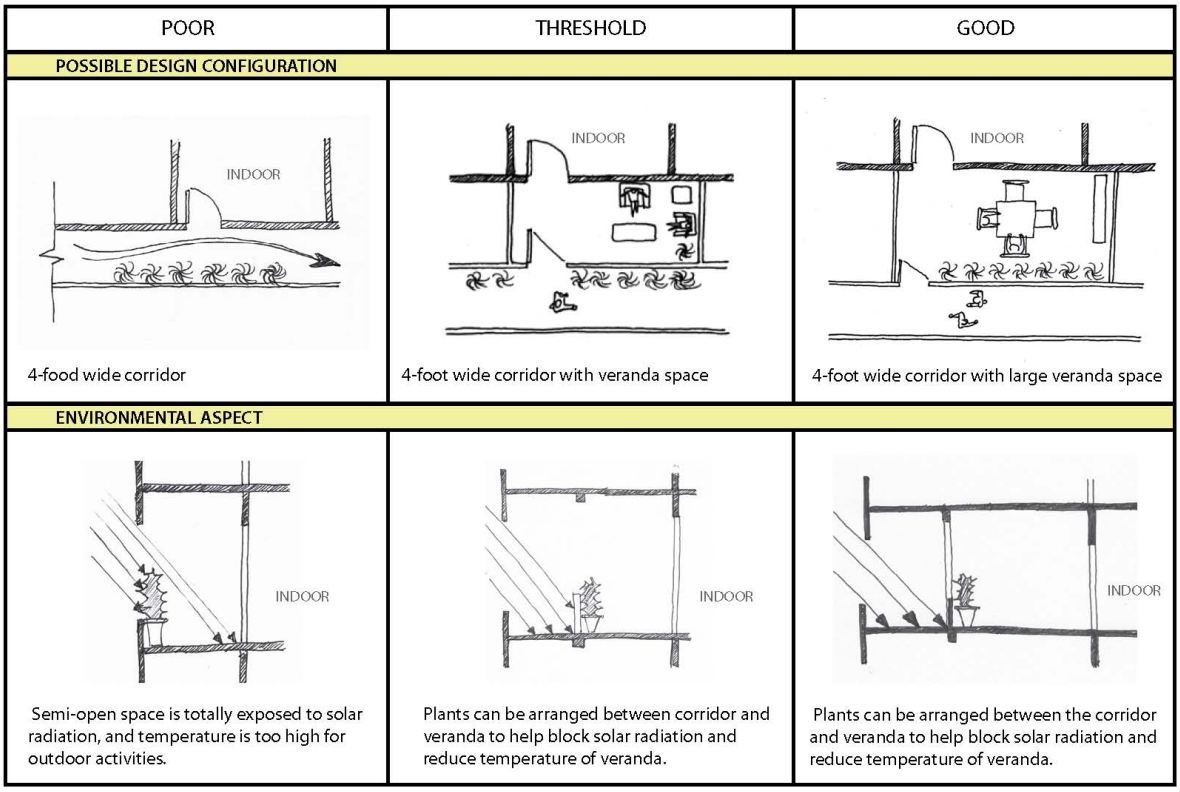


Figure 21 Corridor and veranda design configurations for tropical climates

Environmental design principles and new methods for high-rises are given to create a healthier and more eco-friendly living environment over enclosed and air-conditioning dependent designs. From these guidelines, socio-environmental analyses are implemented to figure out the possibilities of interactive, open-air spaces.

Social spaces that are both interior and open-air provide opportunities to create more environmentally sustainable dwelling. For example, if a concrete flat roof is transformed into

a rooftop garden, it is now also a useable social space. This is especially practical in tropical regions. “When moderate climates and low precipitation rates permit, flat roofs could be constructed with a gravel bed and a drainage system that would support six to twelve inches of topsoil in which grass, flowers, vines, small bushes, vegetables, or even certain shallow-rooted trees could be grown almost year round. These rooftop gardens could provide restful and enjoyable socializing areas. They could almost double the amount of recreational space in cities where they are feasible, while significantly enriching the oxygen content of the air.”[86]

If a semi-private space within the building can be an open-air space situated towards the building envelope, a large fenestration can bring in natural ventilation and day lighting, reducing the need for air-conditioned spaces. For an urban dwelling within a colder region, if the climate does not permit the semi-private spaces to be open-air, they could be glass-enclosed and still allow for natural day lighting. Either way, these semi-private spaces within urban dwellings can simulate “pores” that allow for breathability in the overall design.

On the environmental level, in order for a veranda space to be usable, human comfort is essential. Users need to feel comfortable throughout the day, and lighting levels need to be acceptable.

Transitional spaces like semi-private verandas and public corridors give people opportunities to freely say hello, as if they were on the front lawn of a single-family home. Like front lawns, veranda spaces are great outdoor spaces for gardening, sitting, reading, chatting, child play, parties, and exercising, depending on their size. Figure 21 shows different ways the veranda space can be applied into high-rise housing projects in tropical climates.

[86] Mehrabian, *Public Places and Private Spaces: The Psychology of Work, Play, and Living Environments*, 101.

CHAPTER VII
CONCEPTS OF SOCIAL SPACE IN RESIDENTIAL PRECEDENTS

PRECEDENTS TODAY

The contemporary precedents presented in this chapter have been chosen for their implementation of social space in each building's design concept. Spatial concepts such as the "sky bridge" or "sky court" (which will be discussed further) will be analyzed through existing built residential projects that attempt to evoke the idea through their forms and spatial planning. These precedents offer an understanding of how the concept of social space has been implemented in methods beyond the street level courtyard or retail podium. Finally, there will be an analysis of how the boundaries between private homes and public circulation space in a residential dwelling become ambiguous through the integration of social space.

7.1 MIXED-USE NEIGHBORHOOD

Case Study: Unité d'Habitation

Location: Marseilles, France
Architect: Le Corbusier
Year of Completion: 1952

The Unité d'Habitation in Marseilles, France was one product of twenty years of dwelling design research by Le Corbusier. Constructed in 1952, the Marseilles Unité (first of a series) is an eighteen-story block with 337 apartments of twenty-three different types designed to house 1600 people. The access corridors, or what Le Corbusier calls "streets," are found only on levels 2, 5, 7, 8, 10, and 13 because of the various unit types that are offered, including single-aspect two-person apartments and studios, the only type without a double-height living space.

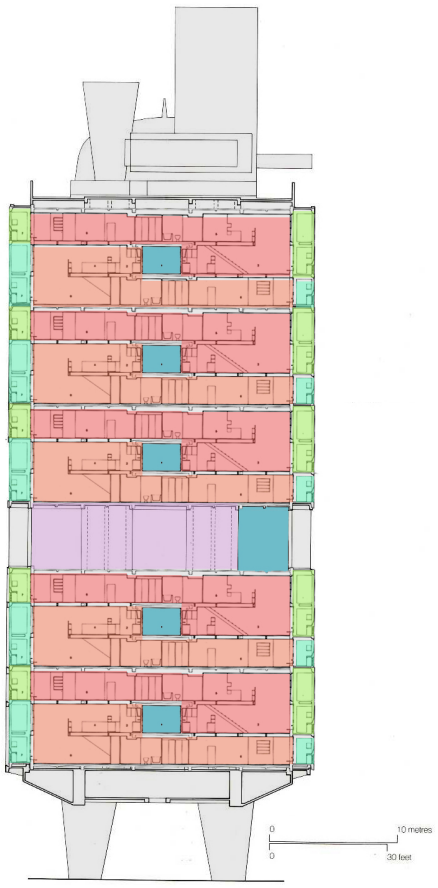


Figure 22 Diagrammatic section drawing of Unité d'Habitation

Le Corbusier integrated his famous *pilotis* at the ground level to create a more sociable ground level. The pilotis, or structural support columns, raise the building to free up the ground level as a flexible, open-air space.

Figure 23 The *pilotis* can be seen from the ground level of the Unité d'Habitation by Le Corbusier in Marseilles, France

The *Unité d'Habitation* by Le Corbusier is one of the first building designs to implement public spaces within its program. This design includes a laundromat, a market, a kindergarten, and a restaurant, and instead of guest rooms in the individual flats, the block has a hotel with eighteen rooms. There are also shops, a sick bay and dispensary, and a bar included within the block.[87]

[87] French, *New Urban Housing*, 82.

Figure 24 The public “street” in the Unité d’Habitation by Le Corbusier in Marseilles, France consists of a laundromat, a market, a kindergarten, and a restaurant

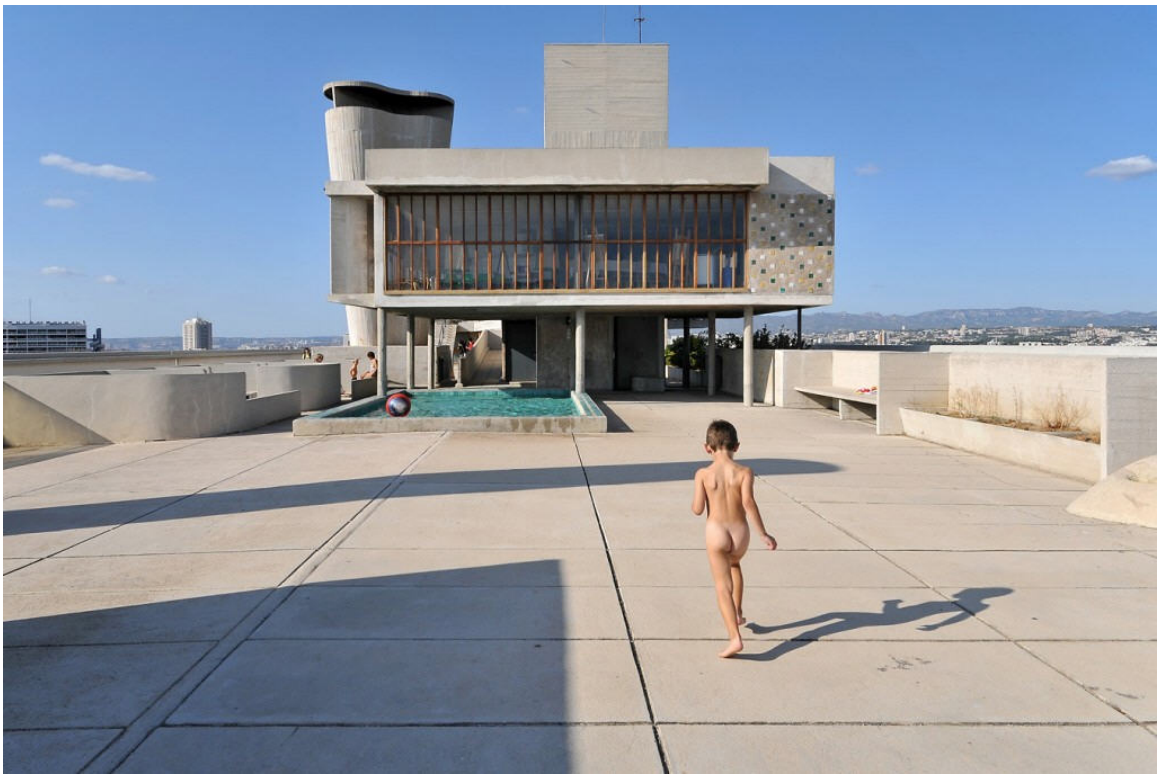


Figure 25 Rooftop daycare facility in the Unité d’Habitation by Le Corbusier in Marseilles, France

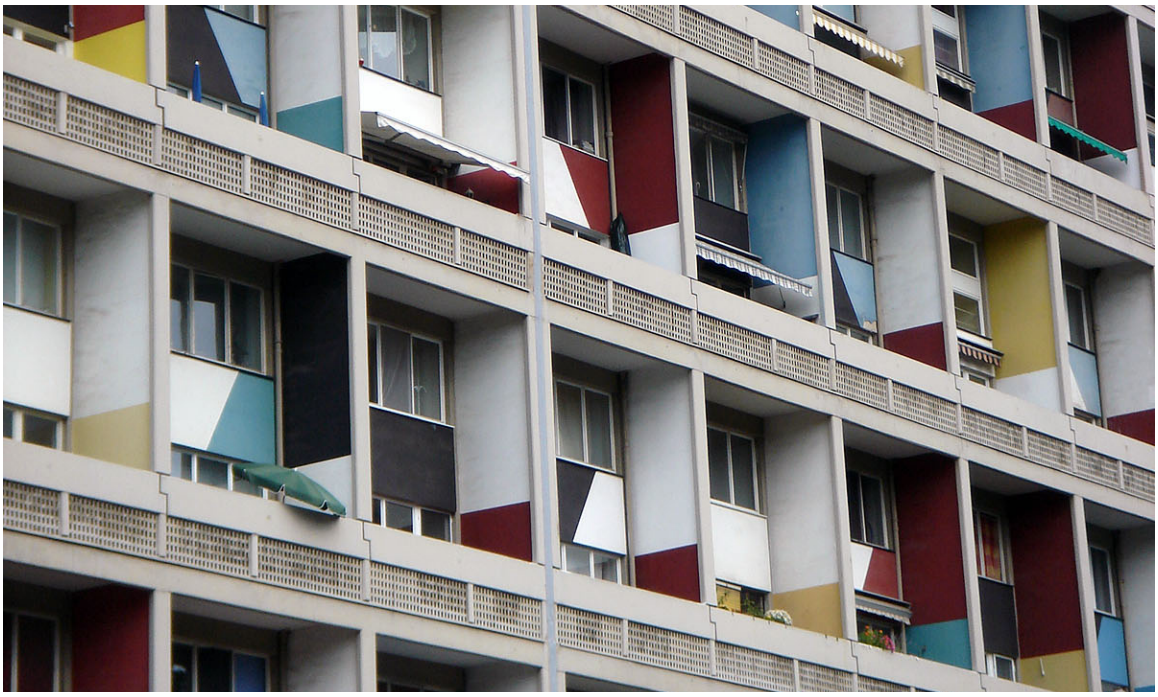


Figure 26 Façade of the Unité d'Habitation by Le Corbusier in Marseilles, France

Figure 27 Loft interior of the Unité d'Habitation by Le Corbusier in Marseilles, France

Figure 24 depicts a section of the Unité d'Habitation. The "streets" are shown in blue, the hotel with restaurant and bar is shown in purple, loft spaces are shown in pink-orange, and outdoor balconies are green. Figure 36 shows the building envelope with double-height openings for each apartment unit. It is controversial as to whether the Unité d'Habitation is a success. Some spaces have not functioned as Corbusier planned; public spaces are hardly used and empty most of the time.

7.2 THE COURTYARD AND THE SKY COURT

Jason Pomeroy takes the idea of the courtyard and city square to the next level:

Sky courts are managed, semi-public spaces that serve as both destination and transition space – retained within the tall building typology. As a destination, they can provide a convivial environment for social interaction, (like the court); and as a transitional space it provides an ease of movement (like the arcade)…the transitional sky court will provide civil society the same freedom and choice of movement in the sky as does its counterpart (open space) on the ground…"

Like recessed terraces, the sky courts serve as interstitial zones between the inside and outside areas. Besides providing shading to that portion of the building, sky courts can also serve the following multiple functions: As emergency evacuation or as areas of future spatial additions such as washrooms, kitchenettes, etc. They also furnish the built form's users with a more humane environment as an optional open-to-sky zone for them to step out from the internally enclosed floor areas, to enable them to experience the external environment directly and to enjoy views."[88]

A few residential buildings orient their building blocks towards one or more courtyard spaces. These courtyards are normally placed at the ground level and function as spaces for residents to gather and interact with one another.

[88] Pomeroy, "Sky Courts as Transitional Space: Using Space Syntax as a Predictive Theory."

Case Study: Hoornwerk Residential Complex with Care Facilities

Location: Deventer, Netherlands
Architect: KCAP Architects & Planners
Year of Completion: 2008

The entry doorway to a private unit can become an advantageous element toward creating a sociable courtyard space. The unit front doors, which KCAP Architects & Planners call social "house fronts," are more effective when they surround a central social courtyard, at any scale. The house front can be oriented towards this central social courtyard, which can be as small as an elevator lobby with seating furniture and tables for conversational groupings or as large as a recreational garden space.

KCAP Architects & Planners applied the concept of the courtyard in a subtle way for the residential complex, Hoornwerk in Deventer, Netherlands. "The urban plan reacts to this paradox [simultaneous demand for a small, intimate urban environment and a structure for large ensembles of buildings] and combines the advantages of a small-scale city-structure with that of large object-like units through programming different building types, dwellings, apartments, care and grouping them around a semi-public courtyard or system of alleys."[89]

Apartments that face each other will increase the possibility of friendships forming between neighbors. Public corridors should be oriented towards each other, and if possible, combined as a flat plane on the ground floor or through bridges on the upper levels. This concentrates human movement so other people are viewable at different vantage points, forcing inhabitants to cross paths in the semi-private spaces more frequently. "People living in houses that faced away had many fewer friendships (4 percent) with people in the community than did those whose homes faced each other (75 percent)."[90]

The central node also enforces the idea of human security as residents within the dwelling become familiarized with one another and can pin point strange activity or strangers at any

[89] KCAP Architects & Planners, "Hoornwerk."
[90] Mehrabian, *Public Places and Private Spaces: The Psychology of Work, Play and Living Environments,* 112.

time of the day. “Good locks help of course, but the best defense against being ripped off is alert people who share a feeling of responsibility for their floor or mini-community and know enough about the habits and friends of their neighbors to get suspicious about something.”[91]

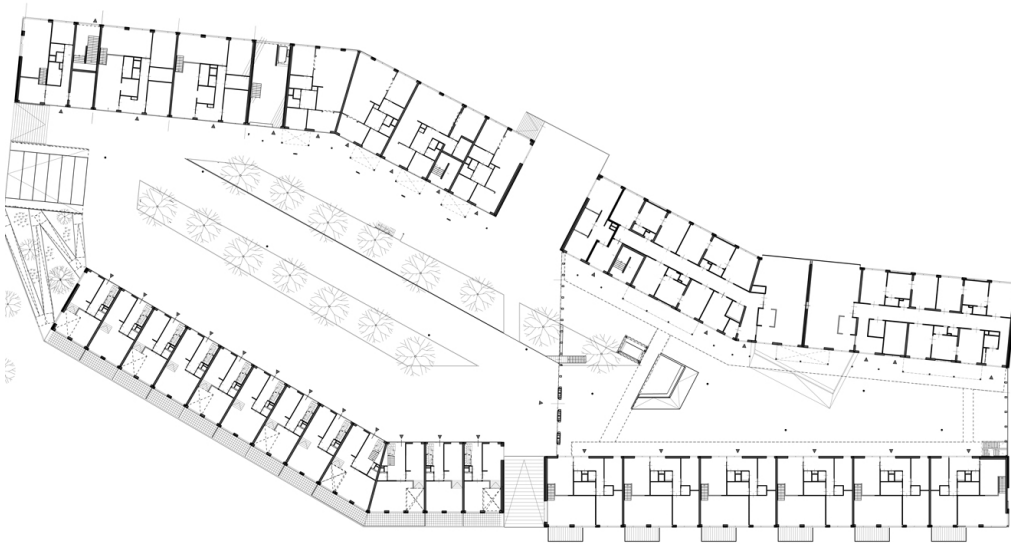


Figure 28 Typical floor plan of the Hoornwerk Residential Complex with Care Facilities in Deventer, Netherlands by KCAP Architects & Planners

[91] Mehrabian, *Public Places and Private Spaces: The Psychology of Work, Play and Living Environments,* 112.

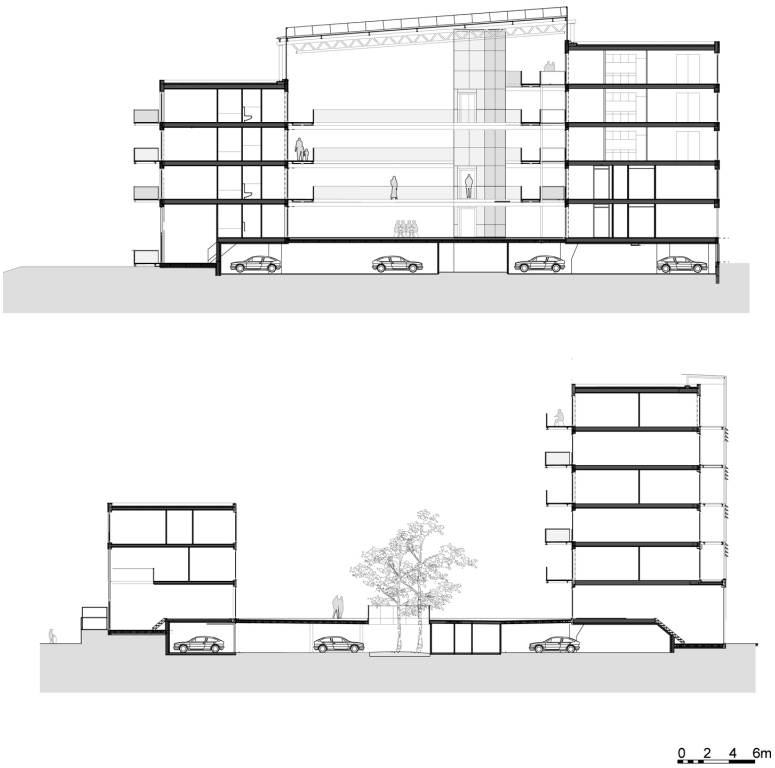


Figure 29 Section Drawings of Hoornwerk Residential Complex with Care Facilities in Deventer, Netherlands by KCAP Architects & Planners

Figure 30 Central courtyard interior of Hoornwerk Residential Complex with Care Facilities in Deventer, Netherlands by KCAP Architects & Planners

Case Study: Tietgen Dormitory

Location: Copenhagen, Denmark
Architect: Lundgaard & Tranberg Architects
Year of Completion: 2006

"The principle inspiration for this project is the meeting of the collective and the individual, a characteristic inherent to the dormitory building type."[92]

While the dormitory is a subcategory of the residential building type, the innate characteristics of the dormitory can inspire research on social spaces. As mentioned in the above quote by Lundgaard & Tranberg Architects, the dormitory emphasizes the need for social spaces to nurture a young, energetic student community in college housing facilities.

The simple circular form of the Tietgen Dormitory is a response to the dormitory's site context. The form is a bold symbol that represents equality and community, which contrasts with its texture – receding and protruding forms that house the unique student dormitories. The cylindrical shape surrounds the focal point of the building, which is a communal courtyard space. The protruding forms depicted in Figures 26 and 27 are the communal spaces within the dormitory, which are oriented towards the courtyard. "The unique identity of each individual residence is emphasized, while the potential urban monumentality of the cylindrical form is neutralized."[93]

[92] Lundgaard & Tranberg Arkitekter, "Tietgen Dormitory."
[93] Actar, *Total Housing: Alternatives to Urban Sprawl,"* 313.

Figure 31 Exterior of Tietgen Dormitory in Copenhagen, Denmark

The upper levels are organized with 360 dormitory units along the perimeter. Entrances and common facilities are located on the ground level. As shown in Figure 32, 33 and 34, the communal areas within the dormitory, such as the communal kitchen and balconies, face the central courtyard. The dormitory units require more privacy, therefore they are oriented to have an extroverted view of the site surroundings.

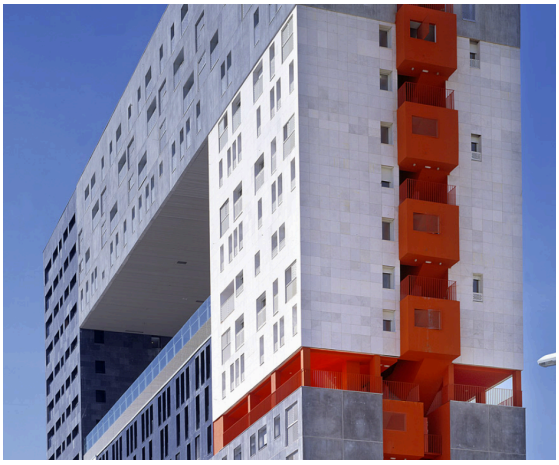
From the courtyard, students are able to see the communal spaces within the volume through the application of glass material. The activity within the smaller social spaces of the building is reflected on the activity within the courtyard. The solid and void work together to create a vital student community throughout the dormitory complex.

Figure 32 A lively, open-air central courtyard within the Tietgen Dormitory

Figures 33 & 34 Protruding communal spaces are oriented towards the courtyrd in the Tietgen Dormitory

Case Study: Mirador

Location: Sachinarro, Madrid, Spain
Architect: MVRDV & Blanca Lleó
Year of Completion: 2005



Figures 35 & 36 The Mirador by MVRDV & Blanca Lleó in Sachinarro, Madrid

In the Mirador, the traditional perimeter block is flipped vertically to turn a central courtyard into a public square above the ground plane. Architecture firm MVRDV and Blanca Lleó derived this design concept in line with Spain's trend within the past decade of developing giant new neighborhoods known as PAUs which surround the city core. The new giant neighborhood of PAU Sanchinarro is situated on the northeast edge of Madrid. While PAUs are usually constructed as six-story blocks that surround a private courtyard, the design of the Mirador breaks from this convention by flipping the perimeter block vertically. This allows the courtyard to sit on the building and provides views of the city and the Guadarrama Mountains on both sides.

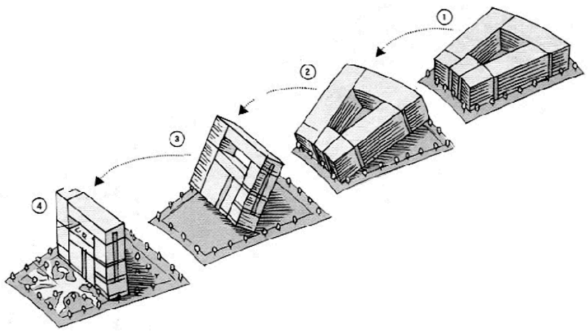


Figure 37 Concept sketches of the Mirador by MVRDV and Blanca Lleo

The sky plaza site forty meters above ground level is a semi-public plaza, providing residents and neighbors with a community garden and an open space to socialize and enjoy views of the city. The public can access the sky plaza via an elevator that lifts from the ground directly to the plaza.

Figure 38 The Sky Plaza of the Mirador

Figure 39 The Sky Plaza of the Mirador

Besides the semi-public sky plaza, the program includes 165 housing units within a twenty-two-story building block. The corridors and egresses are highlighted by orange walls. The vertical egress are slitted on the edges of the building, which is evident from the street through the orange color.[94]

[94] Actar, *Total Housing: Alternatives to Urban Sprawl,"* 284-289.

Figures 40 & 41 Circulation and Egress spaces of the Mirador

Beyond the central concept of a flipped perimeter block, MVRDV incorporated another unconventional housing characteristic – the Mirador contains a wide variety of compact housing types, instead of repeating the standard family unit within the whole building. These housing units accommodate different household types and lifestyles to provide residents with a variety of views, floor areas, and amenities. The housing units are grouped into small buildings, which are then "stacked and glued" together to make a superblock.

The Mirador is considered a "reference point for the city extension and region at large, as a counterpoint against the massive uniformity of the surrounding blocks."[95]

[95] MVRDV. "Mirador."

Case Study: SkyVille @ Dawson

Location: Queenstown, Singapore
Architect: WOHA Architects
Year of Completion: February 2015

The SkyVille @ Dawson has been commissioned by the Housing and Development Board in Singapore. It will consist of twelve "sky villages" that include eighty units and a shared communal space, totaling 960 housing units. Each sky court is a naturally ventilated community terrace and garden.

Figure 42 Rendering of SkyVille @ Dawson by WOHA Architects.

The design focuses on three themes – community, variety, and sustainability. The public and semi-public spaces are varied. The SkyVille @ Dawson includes a landscaped park, two community pavilions for weddings and funerals, play and fitness areas, courts and

lawns, an urban plaza, and a rooftop park. The urban plaza is located along a linear public park and provides a supermarket, coffee shop, and retail spaces. The rooftop park includes a 400-meter jogging track, pavilions, and photovoltaic systems that power the common lighting for the building.

Figure 43 Rendering of the rooftop garden in SkyVille @ Dawson by WOHA Architects

Figure 44 Rendering of the urban plaza in SkyVille @ Dawson by WOHA Architects

The design also offers a variety of floor plans for loft living or for people who intend to work at home. There are three versions of each unit type to accommodate different family sizes and lifestyles. All units are cross ventilated while common areas such as the elevator lobbies and corridors are naturally ventilated and lit.

The initial design submitted by WOHA was exhibited to the public for feedback and

comments, and then revised based on the feedback. “The innovation is the external, covered spaces between the blocks. These social and community spaces in the sky are a way to ensure that high rise, high density projects do not cause alienation, but instead can be vibrant living, low energy communities.”[96]

“…This scheme seeks to recreate the ‘kampong traditional village community in a high-rise high-density environment. Through the physical sharing of a community zone analogous to a village space, this will facilitate the forging of community bonds.”[97]

Figure 45 Section Rendering of SkyVille @ Dawson by WOHA Architects

[96] Furuto, Alison. “SkyVille @ Dawson / WOHA.”
[97] WOHA. “Dawson Estate, Singapore.”


Figures 46 & 47 Rendered perspectives of SkyVille @ Dawson by WOHA Architects

Figure 48 Typical Floor Plan of SkyVille @ Dawson by WOHA Architects.

Figure 49 Rendered perspective of SkyVille @ Dawson by WOHA Architects

7.3 COMBINED VOLUMES THROUGH BRIDGES

Case Study: Linked Hybrid

Location: Beijing, China
Architect: Steven Holl Architects
Year of Completion: 2008

The Linked Hybrid is a mixed-use development containing 750 apartments, a cinema, galleries, retail shops, a sixty-room hotel, and a kindergarten with a total floor area of just over 2 million square feet. The complex is pedestrian oriented; all public functions at the ground level including a restaurant, hotel, kindergarten and cinema, are oriented towards a large, central green space. Above the ground, both public and private spaces are combined in nine building blocks with glass-enclosed bridges that serve various functions. These bridges located between the twelfth and eighteenth floors contain a series of programs for social interaction such as a swimming pool, fitness room, café, gallery, auditorium, and mini salon. Each bridge offer views over the city of Beijing. They function as "social condensers, resulting in a special experience of city life for both residents and visitors."[98]

Figure 50 & 51 Linked Hybrid by Steven Holl Architects in Beijing, China

[98] Actar, *Total Housing: Alternatives to Urban Sprawl,"* 313.

Figures 52 & 53 Interior views of the sky bridges in the Linked Hybrid

7.4 SUBTRACTED VOLUME

Case Study: Simmons Hall, Massachusetts Institute of Technology

Location: Cambridge, MA, United States
Architect: Steven Holl
Year of Completion: 2002

Simmons Hall at the Massachusetts Institute of Technology is a 350-bed dormitory that includes a street level dining hall, cafe, 125-seat auditorium, and other shared facilities. The building is ten stories tall and 382 feet long. Architect Steven Holl used the concept of "porosity" to allow the building to become a "sponge." The pores that create the sponge are five organic voids that break through specifically chosen areas of the massive building to bring in natural light and ventilation. These voids correspond to the main entrances, as shown in Figure 56, view corridors, and outdoor activity terraces. In Figures 57 and 58, one void functions as a communal space that is open to the sky for natural day lighting. On the outer façade, large, irregularly shaped windows show where the voids interject the building form.[99]

Simmons Hall is considered a reinterpretation of the Unité d'Habitation by Le Corbusier. While the program is similar and the concept of social space exists, Holl takes the design a step further. "They serve to light the shared meeting spaces where their curves stand out in contrast to the rectilinear arrangement of rooms and corridors, and a thin sheet concrete is

[99] Steven Holl Architects. "Simmons Hall."

used to form these more fluid, curving forms in juxtaposition to the massive, ordered rectilinear forms of the rooms."[100]

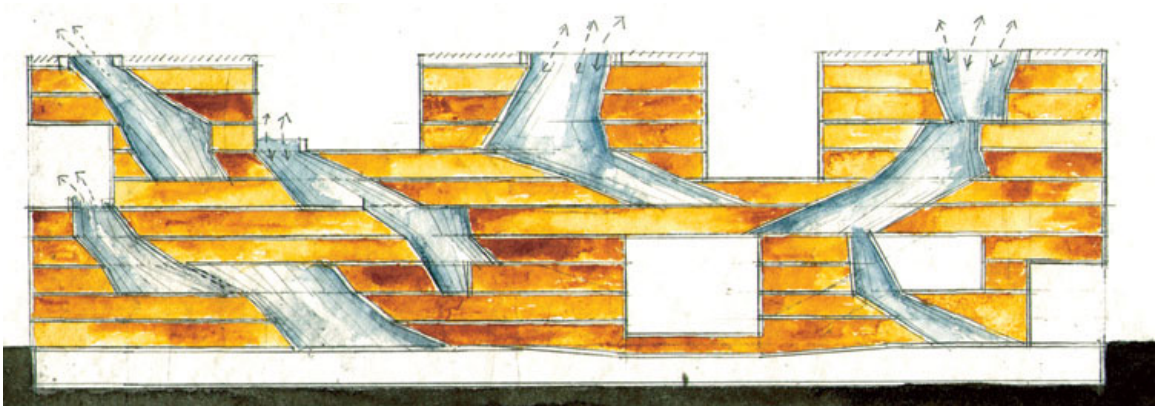
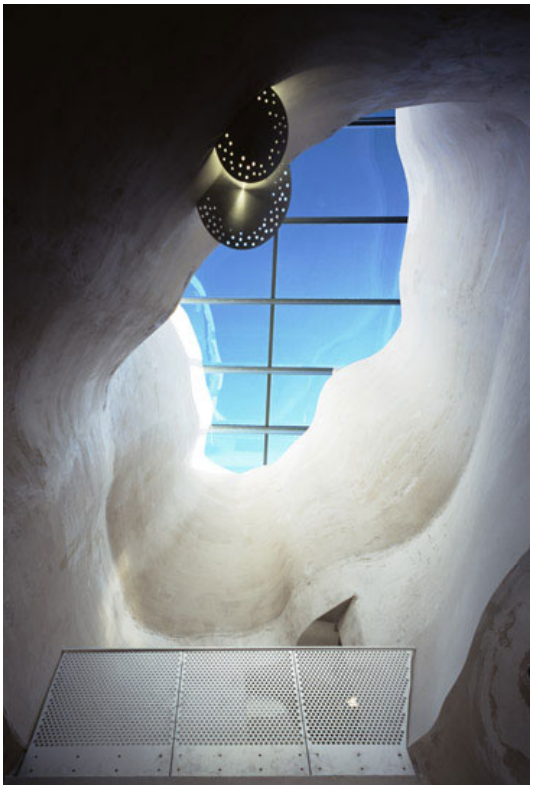


Figure 54 Concept sketch for Simmons Hall, Massachusetts Institute of Technology by Steven Holl Architects

Figure 55 Simmons Hall, Massachusetts Institute of Technology by Steven Holl Architects

[100] French, *New Urban Housing*, 117.

Figure 56 Simmons Hall, Massachusetts Institute of Technology by Steven Holl Architects



Figures 57 & 58 Simmons Hall, Massachusetts Institute of Technology by Steven Holl Architects

Case Study: Commerzbank Tower

Location: Frankfurt, Germany
Architect: Foster + Partners
Year of Completion: 1997

As Norman Foster, an architect who is best known for designing socially progressive buildings, states in his essay "Architecture and Sustainability," "architecture is generated by people's needs, both spiritual and material…the quality of surroundings directly influence the quality of our lives in the workplace, home or public urban centers." Therefore, design does not begin with environmental considerations, but with the people that will use them and their constantly changing needs, including the need for interaction with each other in their daily lives.

Completed in 1997 in Frankfurt, Germany as the tallest building in Europe and the first ecological tower, the Commerzbank Tower uses half of the energy of a conventional tower. "Winter gardens" and atria provide places for social activity. The Commerzbank is a great example of a built project that exemplifies the social, environmental, and spatial aspects of high-rise design. As shown in the section, a central atrium runs through the height of the building. Combined with the voids that act as the "winter gardens," this allows airflow and natural light to enter the building and the offices surrounding these voids. Offices facing the inner atrium are also given views of the city (as shown in the perspective sketch) via the winter gardens.

Figures 59 & 60 Commerzbank Tower by Foster + Partners in Frankfurt, Germany

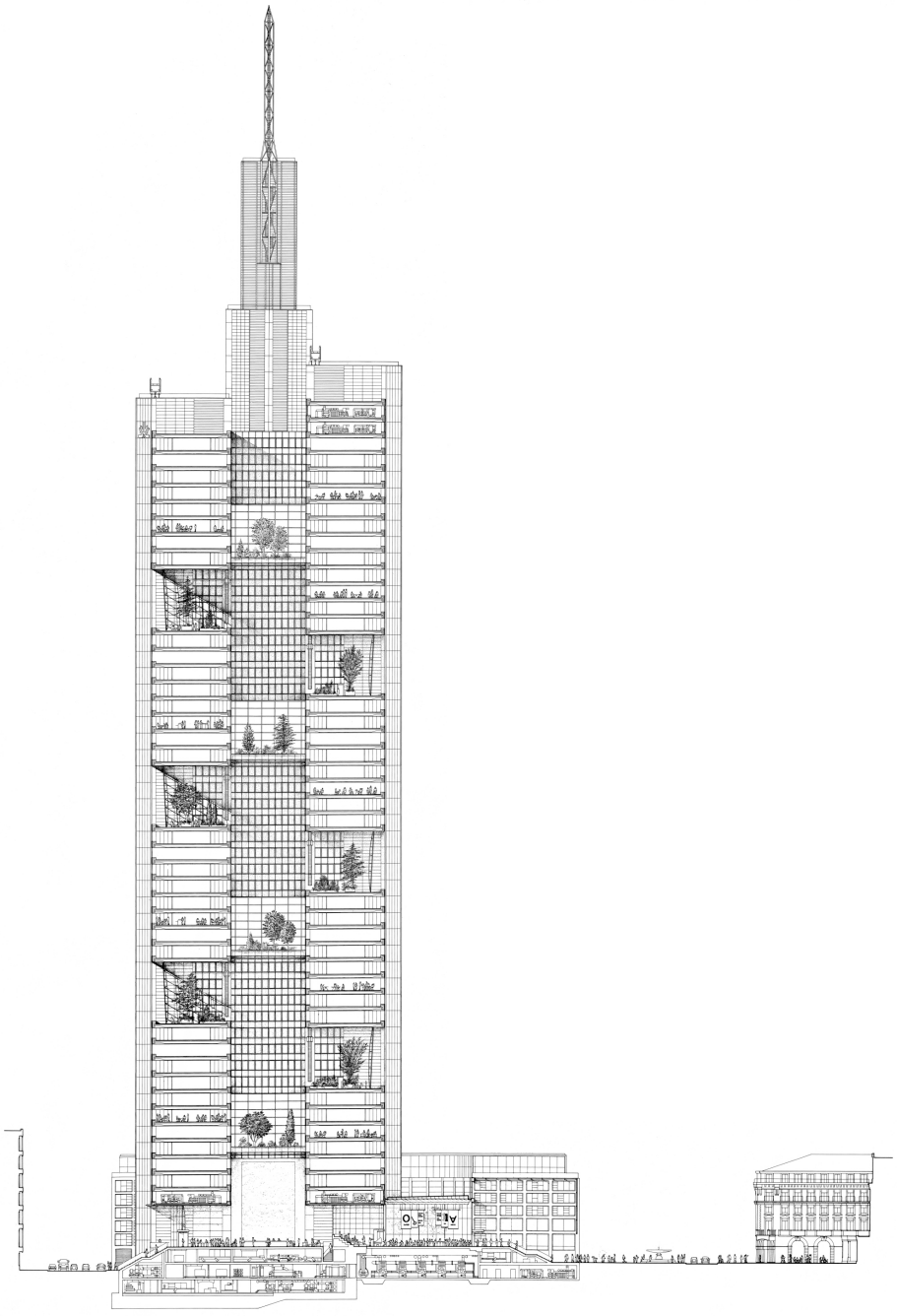


Figure 61 Section drawing of Commerzbank Tower by Foster + Partners in Frankfurt, Germany

7.5 ROOFTOP SPACES

Case Study: The Standard Hotel

Location: Meatpacking District, New York City, New York
Architect: Polshek Partnership Architects (now Ennead Architects)
Year of Completion: 2009

Figure 62 View of the Standard Hotel from the New York High Line in New York, New York

Rooftop bars and rooftop gardens have become a popular type of social space in large cities and are found extensively on top of New York City's prominent buildings. A website called "The Rooftop Drinker" is dedicated to publicizing various rooftop bars around New York City. The website has accounted for approximately forty rooftop bars to date, with exception to places that are exclusively open to members or hotel guests.[101]

[101] The Rooftop Drinker. "Home."

"The Rooftop Drinker" ranks the top rooftop bars of Manhattan according to public opinion. *Le Bain* bar, which sits atop the Standard Hotel, is ranked at number 1, followed by the *The Roof Garden Café* at the Met, and *Upstairs at Kimberly* at the Kimberly Hotel.

Figures 63 & 64 Aerial view of the Standard Hotel in New York, New York

The program of the eighteen-story Standard Hotel includes 337 guest rooms and various types of social spaces throughout the building. The ground floor, which sits below the High Line, includes a bar, restaurant, and an extensive outdoor public plaza served by the hotel. The third floor consists of a divisible banquet space for large parties. The top two floors cap the building with public programs that overlook New York City's skyline. The seventeenth floor includes a health spa, while the eighteenth floor consists of two clubs, which open up to an outdoor terrace where *Le Bain* sits.

Le Bain on the Standard Hotel sets itself apart from traditional bar spots in Manhattan as the public considers it much more relaxed than most bars. The furnishings include fake grass, mini hot tubs, pink waterbeds, and a variety of comfortable furniture. The use of bright colors creates a playful mood for the *Le Bain.* Here, visitors do not have to drink to use the space. They can also sunbathe, view New York's sky line, and converse with friends for a small cover charge.[102]

[102] The Rooftop Drinker. "Le Bain."


Figure 65 & 66 Rooftop bar and terrace space in the Standard Hotel in New York, New York

7.6 PUBLIC CORRIDORS

Corridors provide the greatest opportunities to socialize. Similar to sidewalk-lined streets fronted by yards and patios, corridors are situated directly outside of each private apartment unit and residents walk through them on a daily basis.

In single-loaded corridors, where all the dwelling are along one side of the access corridor, a window can accompany the entrance door which allows natural day lighting and ventilation into the apartment unit. Both sides of the apartment unit will then have views of the outside. In this common spatial arrangement, residents are more likely to keep their curtains open on the entrance side and/or prop the door open to allow wind flow and lighting. This leads to greetings and possibly conversations among neighbors. If there is nothing to look at from these apartment “house fronts,” neighbors may feel uncomfortable looking into strangers’ apartments, avoiding eye contact and hurrying past so they don’t give the impression of being nosy.

To make it more comfortable for neighbors to look in the direction of another neighbor’s “house front,” colorful décor, plants, and chairs can be used around the façade. This gives the passerby a reason to slow down, look at the display, introduce him or herself, and engage in conversation about a topic as simple as the plants growing beside the door. This is seemingly impossible, given that a typical corridor is about four feet wide. The whole

length of the corridor could be widened or niches in front of entrance doors could be added to accommodate more space for furniture, plants, and décor.

Case Study: Stadstuinen

Location: Rotterdam, Netherlands
Architect: KCAP Architects & Planners
Year of Completion: 2002

The Stadstuinen, a residential district in the Kop van Zuid development area in Rotterdam, Netherlands, experiments with the idea of the "house front" space. KCAP Architects & Planners strays away from conventional door types. The use of glass fenestrations breaks down the obvious division of public and private space. A glazed, double sliding glass door is chosen over the typical single, solid door. A glazed window also faces the corridor, enhancing the transparency of the "house front." Inhabitants use curtains to easily control the opacity of their front façade.

The corridor is offset about five feet from the wall, creating atrium space to cultivate relationships with neighbors on the floors above and below. The niched platform acts as a bridge as well as a "patio" for furniture, plants, and décor. The atrium gaps ambiguously create a higher sense of security while defining the "patio."[103]

The extra floor area provided by a semi-private outdoor patio gives the inhabitant the opportunity to decorate his or her "house front." The patio functions similarly to an outdoor balcony that is conventionally turned away from the public corridor. Like the outdoor balcony, the "house front" can be used as a place to relax with outdoor furniture, a place for home gardening, or a place to park a bicycle. Similar to a single-family home's front yard space, inhabitants that occupy the "house front" can interact with neighbors walking on the street or corridor. Simple gestures such as a wave or a nod, or casual conversations, can increase neighbors' likelihood of creating social relationships with their neighbors. Residents can also become familiar with other people that live in the same residential building. This heightens human security and the ability for residents to identify unwanted strangers and strange activity within the building.

[103] KCAP Architects & Planners. "Stadstuinen."

Figure 67 Stadstuinen: Residential district in Kop van Zuid Development Area in Rotterdam, Netherlands by KCAP Architects & Planners

Figure 68 Stadstuinen: Residential district in Kop van Zuid Development Area in Rotterdam, Netherlands by KCAP Architects & Planners

Case Study: Shinonome Canal Court, Block 1

Location: Tokyo, Japan
Architect: Riken Yamamoto & Field Shop
Year of Completion: 2003

Figure 69 Shinonome Canal Court, Block 1 by Riken Yamamoto and Field Shop, Tokyo, Japan

The Shinonome Canal Court is a public housing project that sits on the 16.4-hectare, former site of the Mitsubishi Steel Factory on a manmade island in Tokyo, Japan. The project is divided into a series of six perimeter blocks at a uniform height of fourteen stories. After a design competition, six teams of internationally known architects were chosen to design the six perimeter blocks through a unified code of design. Riken Yamamoto, Toyo Ito, Kengo Kuma, Yama Architects, and ADH Architects designed Block 1 to 5, respectively, and Block 6 was a collaboration between Yamamoto, Makoto Motokura, Keisuke Yamamoto, and Keiji Hori.[104] The overarching theme for the Shinonome Canal Blocks was "prospects for urban housing." For the design of Block 1, Riken Yamamoto

[104] Golani and Dimmer, *Architecture of Israel Quarterly,* "Shinonome Canal Court, Tokyo – The Private Case of Public Space."

wanted to recreate the sense of community that has been lost in most contemporary housing block schemes by offering semi-private corridors within each building block.

The project presents the typical residential model of multifamily housing in Japan, which is composed of bedroom(s), a living room, a dining room, and a kitchen. The whole complex contains approximately 2,000 units. Within Block 1, 60 percent of the doors facing the internal corridors are made of glass. A unique feature of Block 1 is the "f-room," a type of foyer or reception area that simulates the traditional Japanese *genkan.* A *genkan*, or doorway to a Japanese house, is a room that is a transitional space between the public and private. Housing units with a *genkan* allow the residents to publicly display interior furniture, objects, and decor as a way of expressing themselves to their neighbors. They can be used as an office, hobby space, nursery, or any type of housing program space that does not require full privacy. "The small objects left lying here and there attest to the vitality of both residents."[105]

Figures 70 & 71 Interior views of a typical f-room space in Shinonome Canal Court, Block 1

Due to the function of the f-room, the bedrooms and bathrooms are placed the farthest away from the entrance. The play between the opacity and transparency of the public corridor and private housing units is visually stimulating, as a person is able to get an idea of who his or her neighbor is by what is displayed in the f-room. If a resident chooses to have more privacy, colored solid sliding partitions can be moved along the curtain wall to block off visual exposure from the corridor partially or completely, as shown in Figure 52.

[105] Fitz, Wohnmodelle: Housing Models, Experimentation and Everyday Life, "Shinonome Canal Court, Block 1."

Figure 72 Shinonome Canal Court, Block 1 by Riken Yamamoto and Field Shop. Tokyo, Japan.

The f-rooms are oriented towards common terraces that look into the central courtyard. At night, they are highlighted on the building façade with varying colored lights. This adds a sense of security within the common terrace and is apparent from the central courtyard. The terraces draw natural light and ventilation into the interiors of the f-rooms, reducing the need for electrical lighting during the day.[106]

The S-shaped street recessed one story below ground level at the center of the housing block is a public pedestrian promenade with retail shops anchored by a mall at one end and a subway station at the other.[107]

Similar to the Statdstuinen Residential District in Rotterdam, the Shinonome Canal Court, Block 1 design takes the idea of the corridor a step further. The application of a semi-private space enables residents to put personal objects on display along the corridor. The transparency of the "house front" gives neighbors the opportunity to be familiarized with each other, heightening human security. The conventional apartment corridor is no longer monotonous and encourages residents to occupy the public corridor space for a longer amount of time to relax and socialize with neighbors. From the exterior, the public corridors are colorfully lit and placed rhythmically on the façade, creating an aesthetically pleasant appearance.

[106] Actar, *Total Housing: Alternatives to Urban Sprawl*, 318-325.
[107] Golani and Dimmer. "Shinonome Canal Court, Tokyo – The Private Case of Public Space."

Figure 73 Shinonome Canal Court, Block 1 by Riken Yamamoto and Field Shop. Tokyo, Japan

7.7 SOCIAL SPACES IN COMMERCIAL DISTRICTS

Social spaces can take precedent to social areas within commercial areas, most commonly in retail districts. Developers design shopping areas to encourage shoppers to experience the mall as a place to do more than just shop and eat. Visitors are provided rest spaces that include tables and seating. In these rest spaces, people can engage in conversation, eat, study, drink, or simply 'people watch.' Some seating areas in shopping centers surround a central space that includes a stage used for live entertainment and events. The following examples study the anatomy of social spaces in various shopping areas in Hawaii.

Bars

Ala Moana Center is considered the largest open-air shopping center in the world. With 42 million visitors annually, it is considered Hawaii's most visited destination for local residents and tourists. Ala Moana considers itself "Hawaii's premier shopping, entertainment and dining destination with 290 stores and about 70 dining options."[108]

The Mai Tai Bar, located in Ala Moana Center's Hookipa Terrace, is the mall's only open-air food attraction. Besides serving *pupus*, or appetizers, alcoholic and non-alcoholic drinks, the Mai Tai Bar offers live music entertainment. The bar serves as a popular hot spot among both local residents and tourists. The various spatial elements of the Mai Tai bar will be studied for this research paper to understand what makes it a popular venue for social interaction.

Location and Accessibility

The Mai Tai Bar is centrally located on the top level (4th floor) of Ala Moana Center, called the Hookipa Terrace. This level was a later addition to the shopping center, and consists exclusively of food attractions including California Pizza Kitchen, Romano's Macaroni Grill, and Bubba Gump Shrimp Co. restaurant chains. The Mai Tai Bar is rectangular, with all four sides visually open to its adjacent surroundings. A waist-level railing and the bar

[108] Ala Moana Center. "About Us."

physically separate the bar from the public corridors. From within, people are able to look over the open-air atrium onto the third floor and passersbys around the Hookipa Terrace. From the outer edges, people can hear the live music and loud conversations and clearly see what is going on inside the bar. The element of transparency makes the Mai Tai Bar unique and a magnet for visitors.

Visitors can go to the Mai Tai Bar on any day of the week, from 11am to 1am, making it a highly accessible venue. Due to its service of alcoholic beverages, the bar is limited to people ages twenty-one and over.

Lighting and Ventilation

During the day, natural lighting, natural ventilation, and electrical fans supply the interiors. At night, the bar uses electrical lighting and maintains natural ventilation. The roof eaves protect the interiors from rainy weather while providing shade from direct sunlight. The ceiling height allows an abundant amount of light to enter the interiors.

During happy hour (when appetizers and drinks are discounted) and special event performances, crowding may become a problem. People have less space to move around, and personal space may become invaded. Body heat can raise the indoor temperatures, making it uncomfortable for people to sit inside the bar. When all seating is taken, some people are forced to stand uncomfortably.

Furniture

The Mai Tai Bar provides a variety of furniture. It can accommodate both large and small groupings. Visitors who come to the bar alone can sit along the bar counter with stools and can converse with one other person or even the bartender. There are small, high tables with stools for one to five people, metal tables with seats for one to four people, and lounge chairs with coffee tables for the largest groupings for six or more people. The variety is spread evenly throughout the bar. Large social groupings are placed at the edges, while smaller social groupings are more centralized towards the bar area.

Figure 74 Interior view of the Mai Tai Bar in Ala Moana Center, Honolulu, HI.

Shirokiya is a two-story retail store that sells products imported from Japan. The first floor includes retail merchandise and a bakery. The second floor is called the Yataimura, which offers primarily Japanese food, drink, and cooking products. The Yataimura Beer Garden in the Yataimura food court was recently established in 2011. The Beer Garden offers a very cheap happy hour from 5:30pm to 10:00 pm, serving Kirin, Asahi, and Budweiser beer in pitchers and sake shooters. People can buy food and non-alcoholic drinks in small and large portions from around the food court and eat it inside the Beer Garden while enjoying happy hour drinks. The Yataimura Beer Garden has become a popular hot spot for the younger local crowd.

Figure 75 The Yataimura Beer Garden in Shirokiya, Ala Moana Center, Honolulu, Hawaii

Kiosks

Retail and café kiosks are abundant in malls' transitional spaces. Kiosks are rented out to vendors selling food that requires a minimal amount of kitchen appliances or to companies trying to sell a small variety of merchandise. A few advantages of kiosks are that they are more cost-effective for smaller business and are mobile. Their success depends on their location, accessibility, and the demand for their products.

The Honolulu Coffee Company is a chain food and retail shop in Hawaii. Its kiosk is located on the third floor of Ala Moana Center next to the central atrium. While Ala Moana Center consists of three "anchor" department stores—Macy's, Sears, and Nordstrom—the center stage acts as the focal point for all three. The Honolulu Coffee Company kiosk is located at the focal point, making it easily visible from different vantage points around the mall. The kiosk also offers ten to twenty small café tables which seat one to three people where customers can relax, engage in conversation, sip their coffee, eat a light snack, and watch passersby. Its location also allows people sitting at the tables to view the entertainment on

the center stage at the ground level of the atrium.

Figure 76 Honolulu Coffee Company kiosk in Ala Moana Center, Honolulu, Hawaii

The Espresso Bar, Nordstrom's own café, is located in a kiosk just outside of Nordstrom on the second level. Six round, medium-sized tables with chairs are strategically placed at the front of Nordstrom's second floor entrance for customers to rest, engage in conversation, and possibly sip a drink from the E-Bar kiosk. Compared to the Honolulu Coffee Company's kiosk, the Espresso Bar serves only a specific group of customers due to its less-exposed location.

Since kiosks offer quicker food services and are centrally located along a circulation route, they are great for customers to "buy-and-go" or to "buy-and-relax." These open social spaces allow people to experience the movement and activity occurring around them. Most seating provided by food kiosks can also be utilized by non-customers, making them less exclusive and more flexible public furniture.

Figure 77 Dispersed seating in front of Nordstrom in Ala Moana Center, Honolulu, Hawaii

Cafes

Unlike the Honolulu Coffee Company and Espresso Bar kiosks, cafés are permanent food and beverage shops that offer seating within the retail space. Besides buying a drink or food, customers who sit within cafés go for the purpose of meeting someone, waiting for someone, work, or study. Starbucks Coffee exhibits the concept of creating a “third place” for their customers. The goal of Starbucks Coffee shops is to create an environment where people are comfortable in spending a length of time in the café.

The Starbucks Coffee located in Kahala Mall in Honolulu, Hawaii, is one of the busiest locations in the state. Though smaller than most Starbucks Coffee shops, it is popular due to its location in Honolulu and its distance from other Starbucks Coffee locations in the vicinity. This location is also popular because it is located within the central core of the two-story mall. Its wide, open entry façade from the atrium makes it clearly visible from the corridors of the mall. It also has a separate door that opens to the mall’s exterior and parking lot. The demand for Starbucks Coffee in Kahala Mall is supplied by local coffee

lovers, mall visitors, and mall employees.

Figure 78 Starbucks Coffee in Ward Entertainment Center and Barnes & Noble Bookstore in Ala Moana Center in Honolulu, Hawaii.

Nodal Elements

People are attracted to nodes of dynamic activity within commercial districts, and with the supply of seating areas, they gravitate towards these nodes to relax and view the activity that surrounds them. People use these nodes as landmarks to increase the legibility of a complicated floor plan. A few patterns found within shopping malls that create these nodes are stage areas, water fountains, and child play areas such as small playgrounds and carousels.

An entertainment stage can be found in most large malls. A stage, which can be found in both Ala Moana Center and Kahala Mall, is strategically located at the center of the mall. Its location allows the most visibility and the most space for seating elements.

The Centerstage of Ala Moana Center is located at the ground level of the three-story atrium at the center of the mall. People hear music, speaking, and audience applause, and naturally gravitate towards the atrium to view the entertainment. Escalators strategically wrap the atrium to encourage people to circulate to and from the central node of the mall. Stair seating forms the balcony edges overlooking the stage and is also used even when there is no entertainment occurring on stage.

Ala Moana Center's Hookipa Terrace consists of a small fountain that is centrally located between the Mai Tai Bar, California Pizza Kitchen, and the Bubba Gump Shrimp Co. restaurant. From personal experience, I know that this fountain has been used as a meeting point for friends to gather first before eating in a restaurant on Hookipa Terrace. I have also observed people waiting next to this fountain before getting called to their dining table in an adjacent restaurant. The dynamic movement of water increases its attractiveness, and children often like to dip their hands in the water. Overall, the fountain increases the legibility or readability of the fourth floor's Hookipa Terrace.

Figure 79 Fountain on Hookipa Terrace in Ala Moana Center, Honolulu, Hawaii

In Kahala Mall, the central node is highlighted by a temporary stage area and a large fountain. The central node consists of a pyramid-shaped ceiling that lets in natural day lighting during the day. During the Christmas season, the large fountain is replaced by a tall Christmas tree with hundreds of icicle lights dropped from the ceiling. The fountain is wrapped with chairs and tables for people to relax, eat, study, and socialize.

Figure 80 The central atrium space in Kahala Mall, Honolulu, Hawaii

Dispersed

While malls offer seating within the centers of activity, seating is dispersed throughout the mall. The wide corridors of malls often host aesthetic and comfortability elements. Ala Moana Center corridors feature lush green landscaping, ponds with koi fish, and dispersed seating. Mall visitors take advantage of dispersed seating to rest or wait for their companions to finish shopping nearby stores.

Kahala Mall also offers tables and seating areas as rest spaces or gathering places. People use these seating areas to wait for friends or family members to finish shopping, to converse with people on their phones, or to study. I have observed people moving these tables and chairs together to form a larger social grouping to study or engage in a common hobby such as sketching or knitting. On weeknights and weekends, it is difficult to find open seating and tables in Kahala Mall, while on weekdays, these tables and chairs can seem deserted within the shopping corridors.

Figure 81 Dispersed seating in Kahala Mall, Honolulu, Hawaii

The case studies presented in the previous chapter reveal many common characteristics that may contribute to the success of social spaces. The success of a social space is defined by the number of users that occupy the space on a daily basis. It is also measured by the average length of time people decide to use the space and the variety of activities that occur within them. This chapter summarizes these characteristics to create a base set of design guidelines for future social space designs.

8.1 ORIENTATION, VIEW, AND LEGIBILITY

The social space must be easily found from major circulation routes. Social spaces should be oriented toward and adjacent to these circulation routes so that passersby can see inside the space and so that occupants can view the activity outside of the social space. If a social space is located within a building above ground level, it should be adjacent to a window to attain a view of the external landscape and surroundings.

If possible, social spaces should demarcate nodes or landmarks in a building complex or an urban space, thus making the layout more navigable and legible.

8.2 ACCESSIBILITY

Designing a space with more than one door entry or at least one open edge on its boundary will increase the accessibility of the space once people find it. A social space that is not well-defined through a physical boundary allows people to access or pass through the space smoothly, catalyzing human traffic flow. The possibility for human queuing in front of a restricted entryway should be avoided as it will discourage people from using the social space.

8.3 COMFORT

The provision of furniture, specifically chairs and tables, is a key factor in encouraging visitors to occupy a social space for a longer period of time. As observed in examples such as the Pioneer Square Courthouse and the New York High Line, tables and chairs are provided to serve the purpose of the social space. The Pioneer Square Courthouse embeds stair seating for people to wait for their transit lines, eat food from the surrounding kiosks, or simply relax and sunbathe outside of their homes. Besides walking the High Line as an alternative to walking on the street, many visitors walk through the historic elevated rail line to attain a better view of the Hudson River and New York City's skyline. This type of recreational activity can be done individually or in groups.

The quantity of furniture within social spaces should be enough for the average amount of people that will occupy the space on a daily basis. The ratio of furniture to floor area should be balanced, with not too much empty space or too little circulation space for people to move around and sit comfortably.

A social space should accommodate more than one social grouping, therefore the amount and arrangement of furniture should be planned accordingly. There should also be more than one type of seating and table type. For example, the Mai Tai Bar in Ala Moana consists of a mix of lounge couches with low tables, barstools with high tables, and tables and chairs appropriate for dining. The furniture should accommodate various group sizes.

8.4 VARIETY

The social space must versatile. A social space works best if it is occupied during the day and night; and if it is exposed to outdoor weather, it should be useable throughout all four seasons of the year. An example of a versatile social space is Bryant Park in New York City. Due to its private management by investors surrounding the park, it is open most of the day, from 7 am to 7pm-12am depending on the weekday and season. From spring to fall, the great lawn can be used as a place for sunbathing and large group yoga sessions. The

boundary of the lawn consists of an outdoor library, ping pong tables, a small carousel, and kiosks. During the winter, the great lawn is transformed into a popular ice-skating rink venue. Throughout the year, the tables and chairs that surround the lawn are utilized by residents, tourists, and employees located within the park's vicinity as a lunch spot and gathering place for other types of social activities.

8.5 LIGHTING

The right light levels within a social space are important to nurture social activity. The inability to see one's surroundings is displeasing. It is mandatory for a social space to be lit by natural lighting throughout the day and to offer electrical lighting options during the night hours. An interior social space should be flexible and feature various lighting settings and control devices, such as curtains and louvers, to accommodate various types of social activities.

Light levels can vary depending on social activities in controlled environments. For example, lighting in a yoga room can be dim to support a tranquil, calming environment while bars and nightclubs also dim their lights to heighten levels of noise, conversation, and dancing.

To be environmentally sustainable, movement sensors should be applied to minimize electrical energy consumption. Shading devices such as umbrellas, curtains, eaves, and louvers should be incorporated to provide flexibility and minimize direct sunlight exposure.

8.6 VENTILATION

A social space should be well ventilated to room temperature. If the climate of the region allows it, the design of an enclosed or semi-enclosed social space should utilize natural ventilation to reduce energy consumption.

8.7 CONNECTION TO NATURE

A connection to nature is defined as an individual's cohabitation with natural and organic elements, such as trees, water, wood, stone, and potted plants. These natural elements can be applied at various scales. If a social space is detached from the ground level, eliminating the integration of ground park spaces, the application of trees, grass, garden plots, and potted plants can simulate the feeling of sitting within a natural setting similar to sitting in a park. The integration of nature is important for one to feel relaxed.

Besides applying landscaping elements, natural materials such as wood and stone can be used in place of concrete walls as structural and veneer elements. Water is a dynamic natural element. Its flow, sound, and constant movement can trigger human sensory perception. Fountains found in Kahala Mall and Ala Moana Center are examples how water can be applied in a social space. The ability for adults and especially children to have skin contact with water makes the space even more appealing.

Vo Trong Nghia, a "bamboo master," sculpted a restaurant completely made out of bamboo. Called the Bamboo Wing, this restaurant exemplifies the potential to integrate natural elements such as trees, greenery, water, and bamboo structures in their most raw form. The restaurant sits on a water body, using water as a major natural element in its design. The dining experience at the Bamboo Wing is unique as customers are able to feel like they are cohabitating with nature.[109]

[109] Inhabitat. "'Bamboo Wing' is a Stunning Vietnamese Restaurant Made Entirely from Bamboo."

Figure 82 An interior view of the Bamboo Wing in Vinh Phuc, Vietnam

8.8 AESTHETICS

The use of color variation, décor, organic, and dynamic elements make a space more attractive and encourage people to occupy it for a longer period of time. Spaces that lack ornamentation and display a plain quality can be displeasing to the eye. The type of ornamentation must also be carefully chosen to satisfy a wide range of ages and cultures.

The design elements of a social space should be on a human scale. Very large, urban spaces can accomplish this through the use of stair elements, windows, doorways, furniture, and landscaping.

8.9 CLEANLINESS

Figure 83 Trash bins such as these are found throughout New York City's public parks. (Photo: Bryant Park Corporation)

People are normally attracted to well-maintained spaces. Without janitorial services, it is less likely that people will occupy chairs and tables if they have to clean up after the previous user. Trails of rubbish and litter make a space unattractive and overall an unpleasant environment. Though there are exceptions where people consider a less-maintained social space as their third place, people are attracted to clean spaces most of the time.

To maintain a clean environment, the first step is to provide trash bins for users to throw away their own rubbish before leaving the space. This leaves less work for the next user and less of a need to hire janitorial services. A few social spaces in cities or developments that encourage environmental sustainability offer recycle bins besides trash bins. These can be found in some parks, shopping malls and airports. In Bryant Park, trash bins are differentiated by design. There are three different bins for three purposes – the first for newspaper and magazines, the second for bottles and cans, and the third for trash that is not biodegradable or recyclable. The trash bins in Bryant Park became an award-winning design, and has been installed in other major parks in New York City. [110]

[110] DNAinfo.com: Manhattan Local News. "Bryant Park's Tulip Trash Bins Win Design Prize."

PART II
DESIGN APPLICATION

The second part of this research paper incorporates fundamental ideas and design concepts from the first half of this dissertation into a mixed-use residential housing prototype in Hawaii. The project site is located within the busy streets in the urban fabric of Honolulu, Hawaii's capitol. This housing prototype sets it apart from existing contemporary high-rise condominiums in Hawaii by unconventionally becoming "extroverted" at the street level to encourage people to approach and engage with others within the site. The final product results into an urban housing prototype that represents an array of spaces dedicated for social interaction between residents and visitors from the general public.

CHAPTER IX
DESIGN PROJECT BACKGROUND

People who live in inner cities tend to gravitate towards open spaces to for fresh air. During weekday lunch hours, weekends and possibly evenings, open spaces become crowded when families and workers want to take a break from work or enjoy outdoor leisure activities and experience nature. Unlike “urbanites,” “rural dwellers” have less of a craving for open space because it is much more abundant in suburban areas. While urbanites crave more open space, their craving for a sense of privacy is also high.

The vertical plate monotony needs to be remolded to accommodate today’s lifestyle for urban-minded individuals and families. Our living environment should be no longer restricted to the boundaries of a condominium unit but become simulated with public and semi-public spaces, both within the housing block and the streetscape. What types of social activities can occur in these social spaces in the sky, and how do they transition into the private spaces? What defines the boundary between public and private, and how are they spatially integrated while private spaces remain secure from the public?

To create a livable and social environment that can cater to a wide range of individuals rather than force them to live and work in a particular way, it is important to understand society’s needs – what is required by a college student, young professional couple, a family with two children or a retired couple. Their lifestyles are very different from one another; therefore it will be a challenge to find a balance among them.

Conventional residential high-rise designs do not prioritize in creating social spaces beyond the street or podium level. These open spaces are almost always privatized. Most are cost-driven; therefore maximizing the number of units is prioritized over creating open social space for people that live in them. Open social space gives the opportunity to utilize more passive design strategies into the building as a whole. Doing so can relieve health issues, save energy and improve the overall quality of life. If it is understood that open social space can improve the vitality, health and life-cycle costs in urban habitats, a low could be

delegated to provide a ratio for built space and open social space, similar to the floor-to-area ratio, or the FAR ratio, for future housing designs.

9.1 FUTURE URBAN DWELLING IN HAWAII

The capital of Hawaii, Honolulu, is becoming the next metropolitan city in the Pacific that is undergoing population growth and the lifestyle and environmental factors that come with it. The city of Kapolei on the island of Oahu is slowly becoming the “Second City” of Hawaii as sprawled, monotonous single-family housing developments are being developed. With the rising cost of living in Hawaii, families are moving away from the city to find cheaper and larger housing in the suburbs towards west Oahu including Kapolei, Mililani and Ewa Beach. For individuals and families that prefer to live in Honolulu, finding a high-rise apartment is the cheaper option as opposed to buying land property or a house due to Hawaii’s constrained island footprints and extremely high costs.

The existing high-rise housing built in Honolulu with the past two decades are equipped for potential customers with a high income. Some are also solely single-use residential developments. The enclosed, glass facades of these high-rises in Hawaii imply that the design does not take advantage of Hawaii’s warm, year-round climate with more passive design methods. These luxury condominiums also lack social activity with its urban context because they stand as their own, introverted entities. The only open-air leisure spaces are found on top of the podium in the conventional podium (parking garage) and tower block design fashion.

Figure 84 Imperial Plaza in Honolulu contains retail at the ground level, though the public customers are completely separated from interaction with its residents.

Figure 85 Nauru Tower

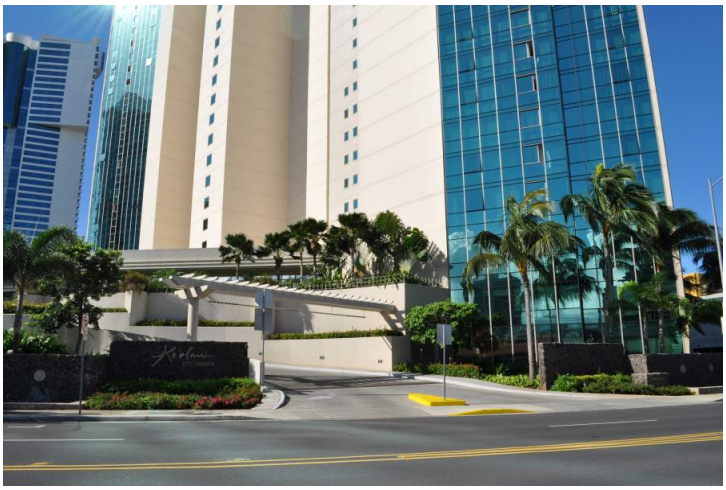


Figure 86 The entrance to the Koolani Tower can only be accessed by a car via a raised access ramp that leads to the lobby

This research paper creates awareness of the opportunities that Hawaii's tropical climate and social conditions can bring to reinvent the way inhabitants live within a high-rise. Very few high-rise designs in Hawaii integrate community engagement at a pedestrian-friendly street level. Most high-rise buildings block off public engagement due to the lack of commercial spaces. A passerby can only view the entrance of a port cochere, cul-de-sac or parking structure from the street. This implies to the passerby that the building is exclusive towards residents only, sealing the ground level view with pleasant landscaping features. Simple designs decisions such as this can ambiguously turn the building away from the public. Community engagement found at the ground level is the first step towards creating a sociable community. Housing developments like these will most likely have only private social spaces.

9.2 GEOGRAPHY

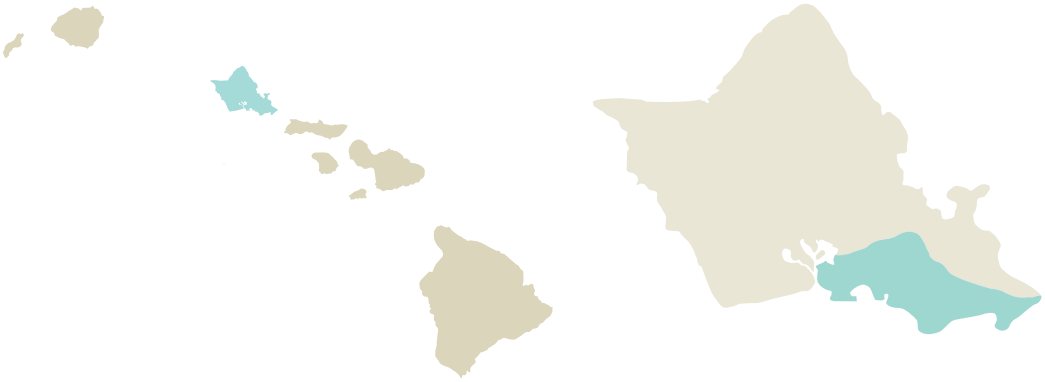


Figure 87: State of Hawaii, Figure: O'ahu, Hawaii

Hawaii is located 21 degrees north of the equator in the Pacific Ocean, placing it in the tropical wet and dry climate zone. Temperature variations are minimal, with the highest average temperatures at 80-89 degrees Fahrenheit, and lows of 65-75% Fahrenheit throughout the year. The annual average precipitation is 18.3 inches. Honolulu has an average of 270 sunny days and 98 wet days a year.

HONOLULU TEMPERATURE (F°)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	ANNUAL
AVERAGE TEMPERATURE	72.9	73.0	74.4	75.8	77.5	79.4	80.8	81.4	81.0	79.6	77.2	74.1	77.2
AVERAGE MAX TEMPERATURE	80.1	80.5	81.6	82.8	84.7	86.5	87.5	88.7	88.5	86.9	84.1	81.2	84.4
AVERAGE MIN TEMPERATURE	65.6	65.4	67.2	68.7	70.3	72.2	73.5	74.2	73.5	72.3	70.3	67.0	70.0
HONOLULU PRECIPITATION (IN.)	3.5	2.2	2.2	1.5	1.1	0.5	0.6	0.4	0.8	2.3	3.0	3.8	22.0
AVERAGE WIND SPEED (MI./HR.)	9.4	10.1	11.3	11.7	11.6	12.6	13.1	12.8	11.2	10.5	10.7	10.4	11.3

Figure 88 Month and Annual Climate Data in Honolulu, Hawaii. (http://www.climate-zone.com)

9.3 DEMOGRAPHICS

From 1862 to 1965, the ethnic mix of the population in Hawaii has intertwined due to the ancestral immigration of plantation workers from China, Japan, Portugal, Okinawa, Philippines, Korea and Germany.[111] Hawaii has become one of the most ethnically diverse in the world as there is no majority, but everyone is a minority. According to the 2010 Census, "more than 23 percent claimed multi-ethnic backgrounds, far more than any other state. Almost 40 percent of Hawaii's population is Asian, about 23% is Caucasian, about 10% is Hawaiian or (other Pacific Islander), about 9% is Hispanic, about 2% is Black, and about 24% of all Hawaii residents are of multi-ethnic background." [112]

Over the last 200 years, each ethnic group has contributed their own cultural elements to Hawaii's local lifestyle. This includes cuisine, ethnic events and festivals, architecture and language.

According the 2000 Census, Honolulu has a population of 374,701 people, 140,337 households and 87,429 families. The City & County of Honolulu is 909,863, making it the 57th largest metropolitan area in the United States. The population density is 4,336.6 people per square mile.

Out of the 140,337 households recorded from the census 2000, 23.7% had children under the age of 18 living with them, 45.5% were married couples living together, 12.1% had a female householder with no husband present, and 37.7% were non-families. 29.7% of all households were made up of individuals and 10.0% had an individual 65 years of age and older.[113]

[111] Hawaii's Plantation Village. "Plantation Workers Timeline."
[112] To-Hawaii.com: Hawaii Travel Guide. "Hawaii: An Ethnically Mixed Plate."
[113] Wikipedia. "Honolulu."

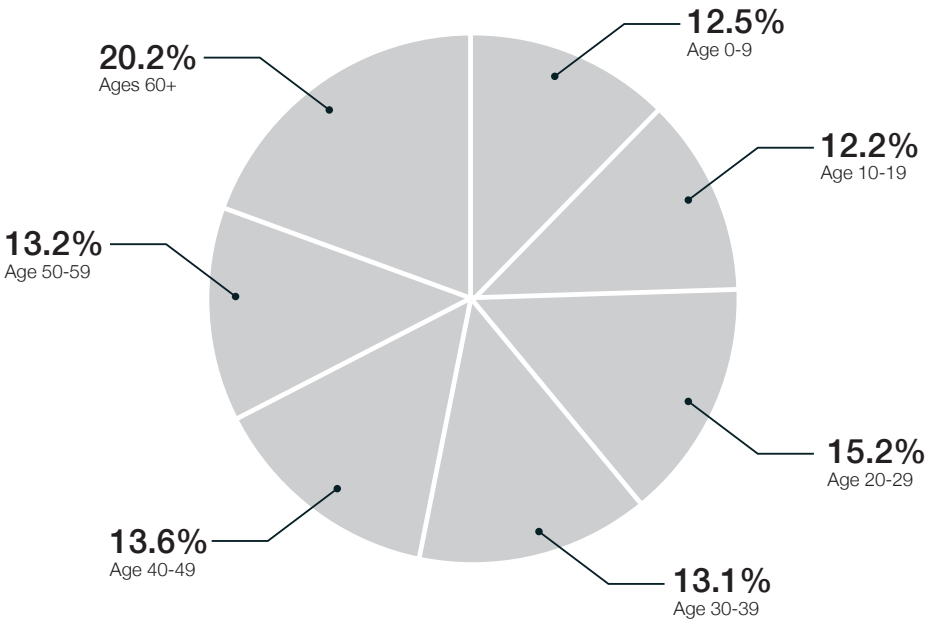


Figure 89 Age Distribution in Honolulu, Hawaii (2010 Census)

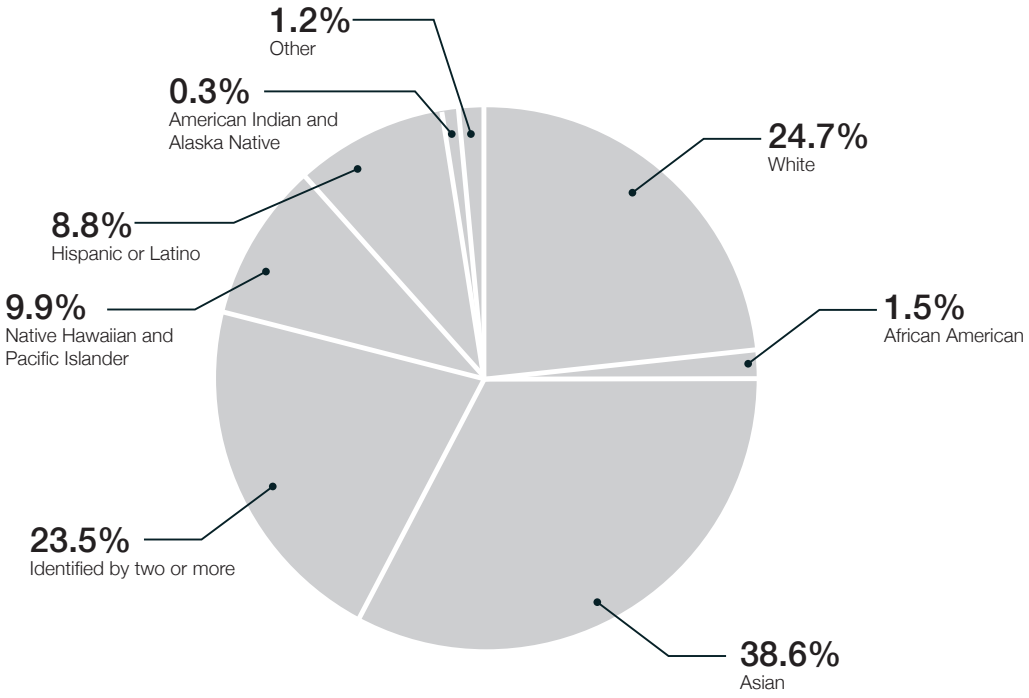


Figure 90 Ethnicity Distribution in Honolulu, Hawaii (2010 Censu)

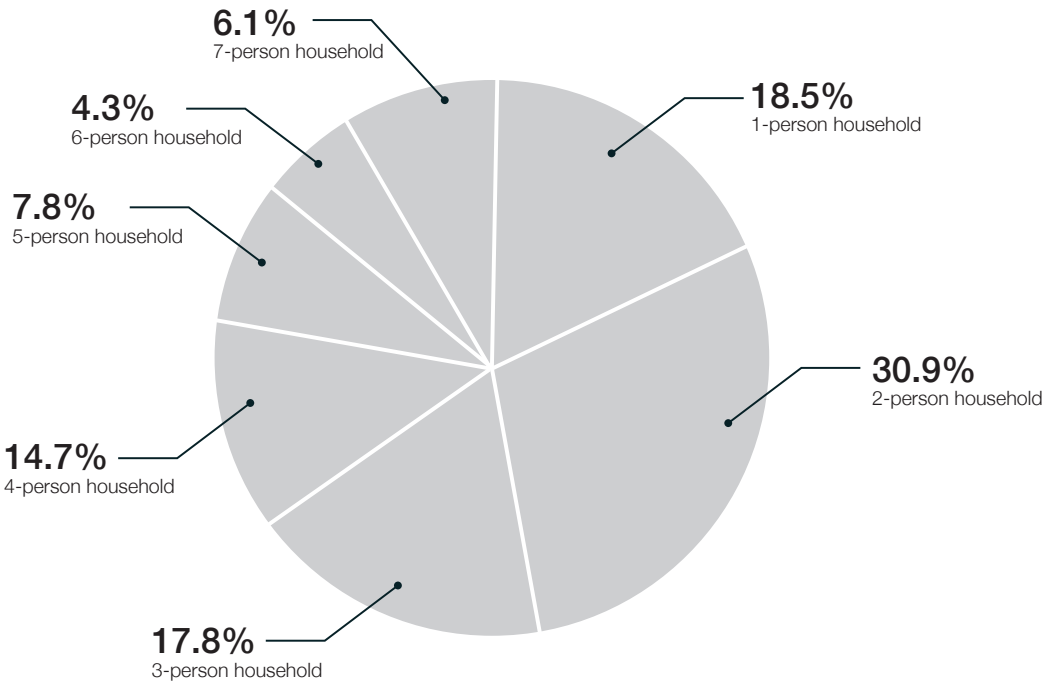


Figure 91 Size of Households in Honolulu, Hawaii (Census 2010)

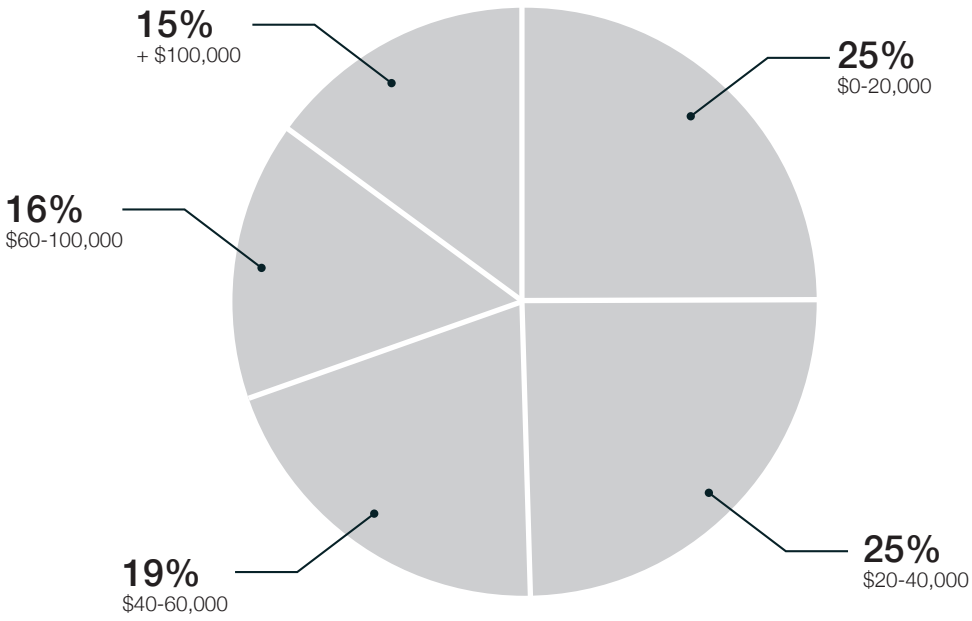


Figure 92 Income Levels in Honolulu, Hawaii (Census 2010)

9.4 CONTEMPORARY HIGH RISE ARCHITECTURE IN HAWAII

Contemporary architecture in Hawaii is commonly found in the Ala Moana and Kakaako region of Honolulu. Many high-rise residential condominiums built within the past two decades are designed for high-income households. These buildings have sealed off opportunities for natural ventilation and day lighting, avoiding the ability to creating more sustainably energy-efficient, passive designs that many of Honolulu's older residential buildings display.

The tallest high rise building in the state of Hawaii is the First Hawaiian Center in Downtown, Honolulu. It stands at 429 feet with 30 floors, designed by Kohn Pedersen Fox. It functions solely as an office building. During the beginning stages of the building's development, Hawaii residents were concerned with the effect that skyscrapers would have on the Hawaiian landscape. To fit in with Hawaii's cultural context, the architects have added metaphors related to natural phenomena, similar to the design of the Hawaii Convention Center near Ala Moana. Following the First Hawaiian Center are condominium developments concentrated within the Kakaako area, such as the Moana Pacific Towers, Nauru Tower, Hokua, and Hawaiki Tower (all within the range of 400-423 feet in height).

These contemporary ideas of skyscrapers and the rail system are still difficult to envision in Hawaii's natural setting for many local residents, therefore it is important to design in consideration to Hawaii's cultural context that will cater towards a futuristic, urban lifestyle for the people of Honolulu. The proposed development in Honolulu will facilitate my research, exemplifying the design guidelines for a future urban habitat in Honolulu and any city within the tropical region.

9.5 SITE ANALYSIS

Honolulu, Hawaii's capitol is located in the southeastern quadrant of the island of Oahu. Many geographic landmarks include Honolulu Harbor, the Ala Wai Canal, Diamond Head and Hanauma Bay. The Koolau Mountains divide the north and south region on the east

side of Oahu.

Figure 93 Honolulu, Oahu, Hawaii

The project site is located within the urban core of Honolulu, which consists of the Downtown, Makiki, Manoa, McCully, Waikiki, Kakaako and Ala Moana districts. Figure 94 highlights the highly dense zones in Honolulu's urban core based on the opacity of the purple shade (more opaque areas symbolizes higher density than more transparent areas.)

The H-1 Freeway, Ala Moana Boulevard, King Street and Beretania Street run parallel to the south shore of Oahu, being the busiest routes of vehicular traffic. The diagram of Figure 95 highlights major and minor traffic routes in Honolulu based on the thickness of the red line, thickest meaning the busiest route of traffic. As shown on the diagram, heaviest traffic runs the east-west direction on Oahu while minor traffic routes run the north-south direction.

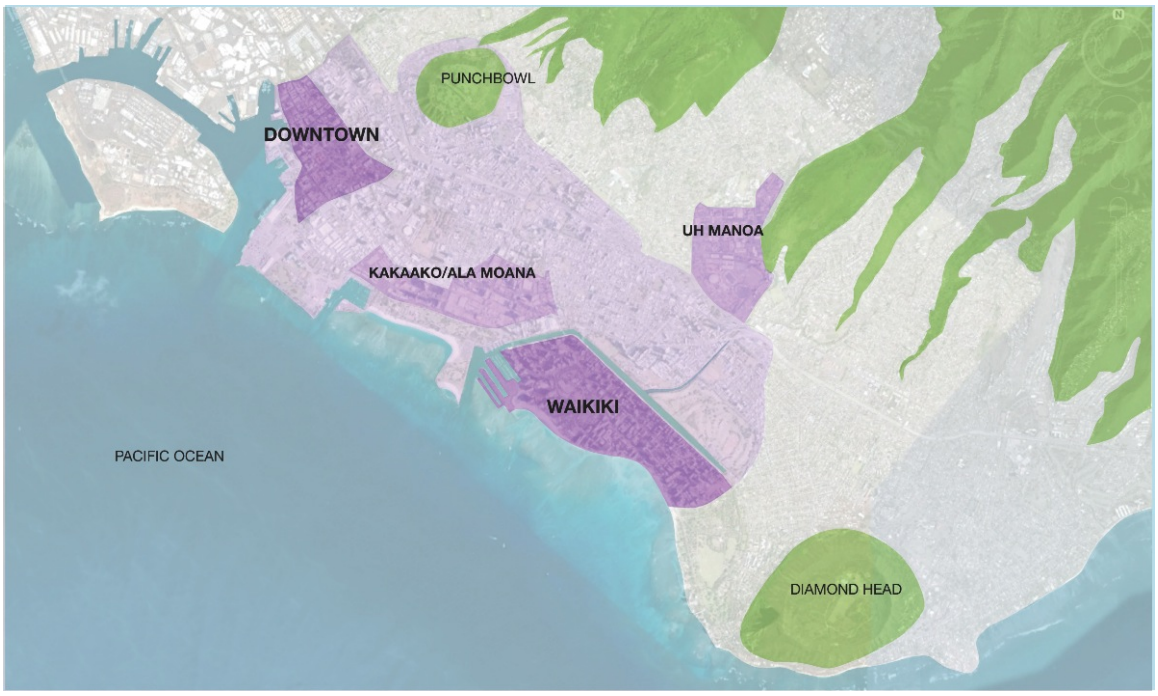


Figure 94 Honolulu Urban Core Density

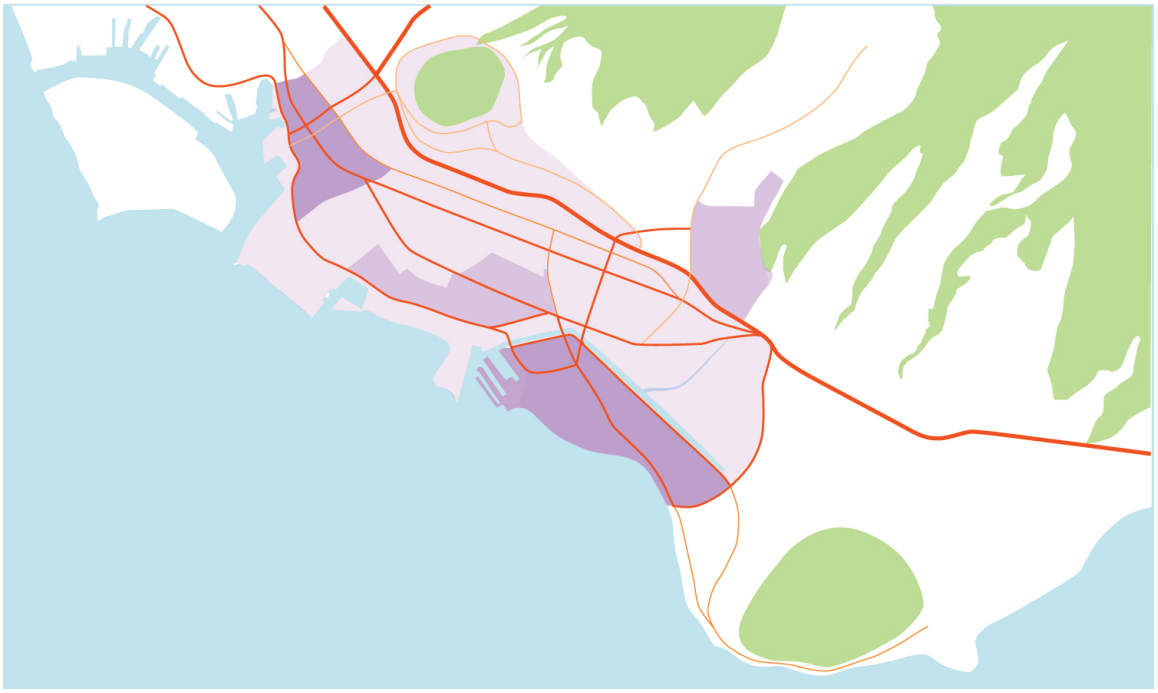


Figure 95 Vehicular Traffic in Honolulu

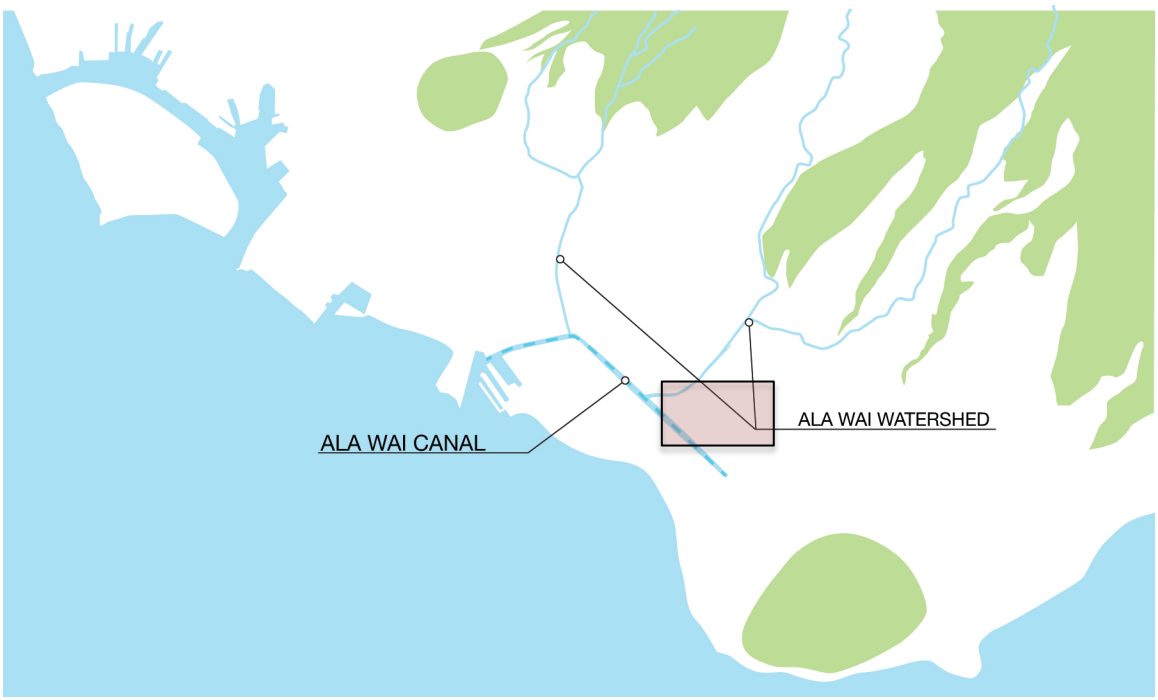


Figure 96 Ala Wai Watersheds within the Honolulu Urban Core

The Ala Wai Watershed, three streams of waterflow running from the Koolau Mountains toward the ocean, are directed toward the man-made Ala Wai Canal (constructed in 1921 by the Hawaiian Dredging Company) that bounds the north edge of Waikiki District. The Makiki Stream and the Ala Wai Canal play an important role in this project because these two water bodies bound two edges of the project site, as seen in Figure 96.

Figure 97 The Makiki Stream and the Ala Wai Canal bounds two edges of the project site.

The site is bordered by three major streets – Kalakaua Avenue on the west, Kapiolani Boulevard on the north and McCully street on the east. As seen in Figure 68, these streets travel through commercial, residential, office, civic and hotel districts. Naturally, the program becomes a mix of these zones, creating a neighborhood within a neighborhood in the urban core.

Figure 98 Land Use zone in site Vicinity

Figure 99 depicts an estimate of the building height densities surrounding the site. The western and north western districts from the site are primarily commercial districts, consisting of retail landmarks such as Ward Entertainment Center, Ala Moana Center, and the Hawaii Convention Center. The north-eastern district of the site is the neighborhood of McCully, consisting of primarily single-family and low-rise multi-family homes. There are a few mid-rise and high-rise residential buildings dispersed in McCully neighborhood. To the south is the neighborhood of Waikiki, abundant with high-rise residential buildings and resort hotels. The block, which the project site is located in, is bounded by two major streets that lead into Waikiki. McCully Street on the east merges with Kalakaua Avenue on the west of the site, which is the main artery that runs through Waikiki's length.

Figure 99 Low, Medium and High Density Buildings in Honolulu, Hawaii.

Ala Wai Canal is an artificial water body that moves water from the Ala Wai Watershed into the Pacific Ocean. It physically divides most of Waikiki from the rest of Oahu. Along with the Ala Wai Promenade, the Ala Wai Canal bounds the southern edge of the site.

Figure 100 & 101 Existing Ala Wai Park Promenade form the west end (left) and east end (right)

The Ala Wai Canal, constructed from 1921 to 1928 by Hawaiian Dredging Company, was built to reduce flooding by diverting the Ala Wai Watershed – Makiki Stream, Manoa Stream and Palolo Stream, from Waikiki directly to the Pacific Ocean through what is now called

the Ala Wai Harbor. Before its construction, the three streams naturally flowed into Waikiki, creating a vast marshland. The Ala Wai Canal allowed the marshland to become transformed into land which buildings could be constructed on. For the past 70 years, the Ala Wai Canal has been successful in fulfilling its purpose – to collect eroded soil and debris as a sedimentation basin. It has also been used for paddling and canoeing sports. [114]

Figure 102 & 103 Outrigger canoes and paddling activities on the Ala Wai Canal.

Within 10 years after its completion, pollution in the Ala Wai Canal became apparent with presence of bacteria and wastes collected from the three streams. People were advised not to swim in the canal, and warnings were heightened after a sewage line break caused by heavy thunderstorms in March 2006. It took a few weeks for the beaches to reopen, and a few months until people felt comfortable enough to use the Ala Wai Canal for recreation again. [115]

The block, which the project site sits on, is a mixture of land use zones. The existing block consists of single-family houses, two-story multiple-family apartments, one high-rise apartment, a single-story civic building, a restaurant, and a storage facility.

The properties on the east side of Makiki Stream will be combined for the project site. Due to the nature of this project as a design prototype, the land-use zoning will be rezoned as AMX-3, or Apartment Mixed Use High Density.

[114] Ala Wai Canal Watershed Water Quality Improvement Project. "Management and Implementation Plan: Volume 1." April 1998.
[115] Ibid.

Figure 104 Existing LUO

LEGEND

A-2	APARTMENT MEDIUM-DENSITY
B-2	COMMUNITY BUSINESS
AMX-2	APARTMENT MIXED USE MEDIUM DENSITY
AMX-3	APARTMENT MIXED USE HIGH DENSITY
BMX-3	COMMUNITY BUSINESS MIXED USE

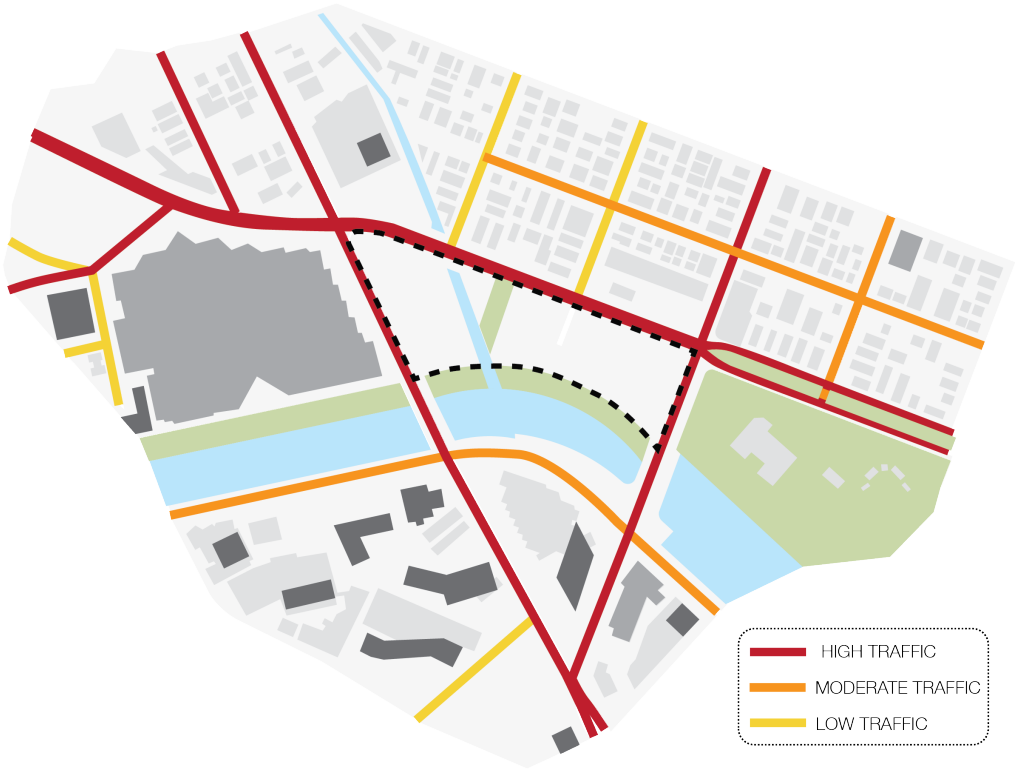


Figure 105 Traffic Density

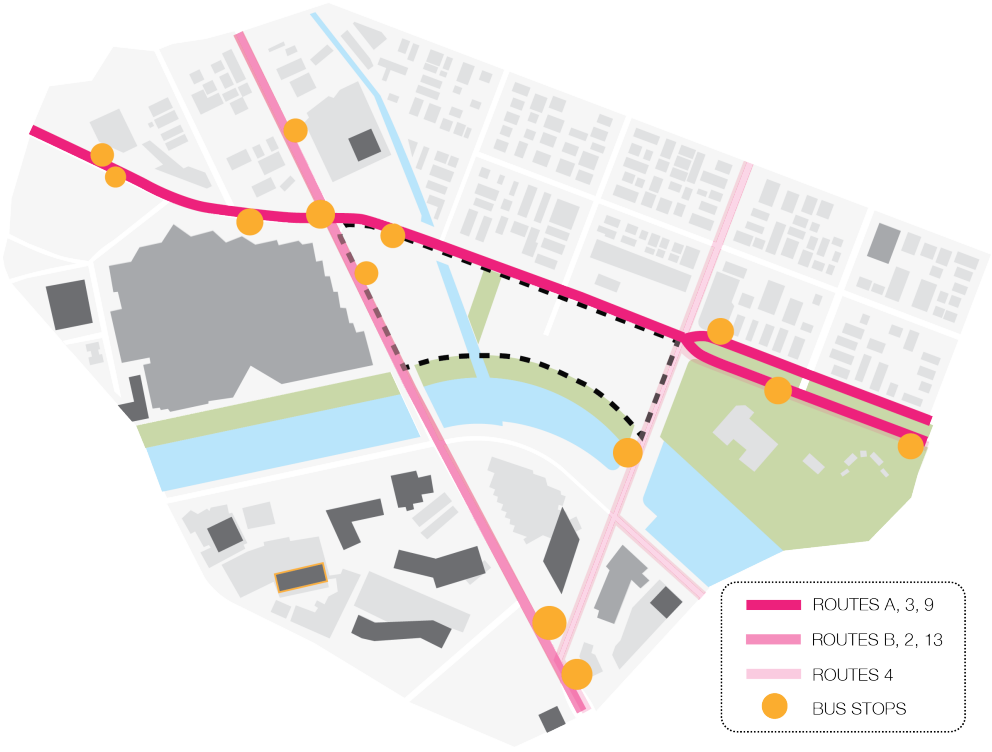


Figure 106 Bus Routes and Bus Stops

This site was chosen because of its central location within diverse zones surrounding it. It is located in a dense area with high traffic for both locals and tourists. It is underutilized, consisting of one restaurant, three-single-family homes and four multi-family buildings on a large site. A majority of the west side of the site is empty, and has an opportunity to become a gateway between *mauka* (towards the mountains) and *makai* (towards the ocean) with the Ala Wai Canal as its dividing element. The mixed-use program is chosen to become a “watering hole,” a place where a wide range of activities can be offered to join locals and tourists.

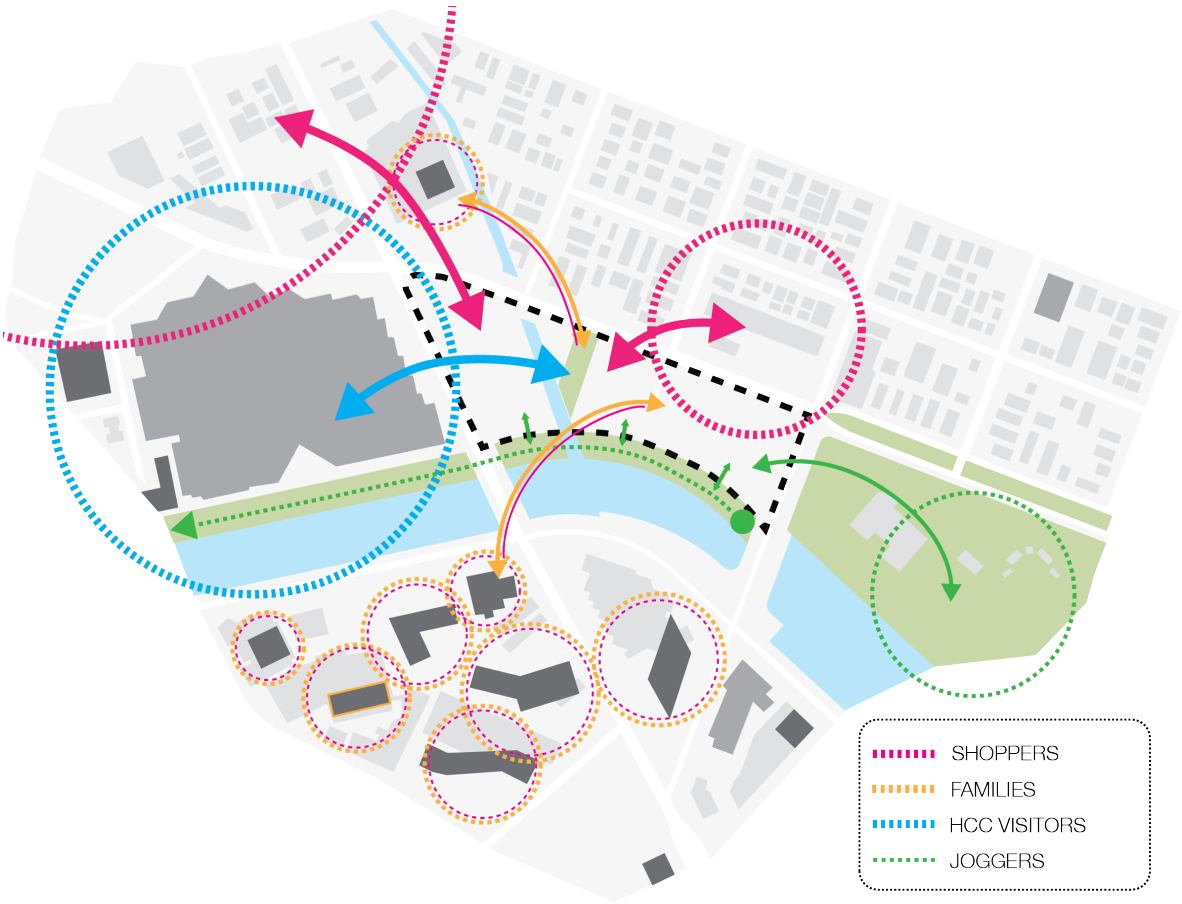


Figure 107 Potential Visitors

10.1 CONCEPT DESIGN

The concept of the “figure 8” takes into consideration the human movement that will occur on the ground level of the site. The overarching goal for the social spaces placed at the street level is to facilitate movement of all visitors to the site that will be entering and exiting from all directions.

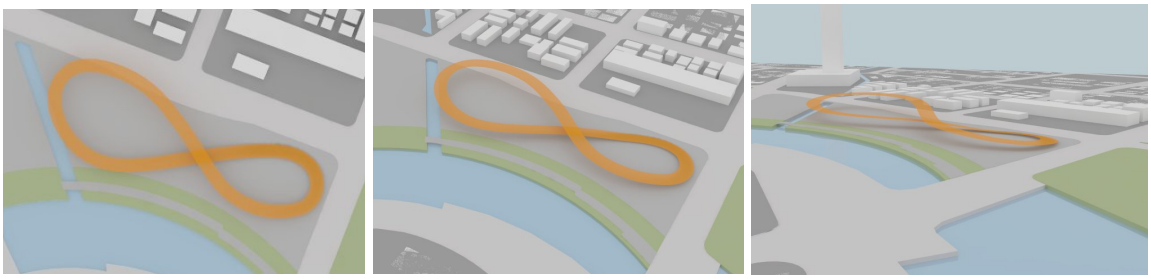


Figure 108 Figure 8 Concept in computer modeling

The figure 8 implies infinite movement, which visitors will be able to experience if they have reasons to stay on the site long enough to do so. The top and bottom of the figure 8 will facilitate the inclination and declination that allows people to travel from one length to another in three dimensions. The figure 8 wraps around two large nodes. This will create two large, semi-enclosed spaces and highlight the entrances of the site.

The first building footprint is created by paralleling the curvature of the Ala Wai Canal Promenade on the southern edge of the site. The second building footprint is a reflection of the first and faces north towards Kapiolani Boulevard. Two curved building footprints line both lengths of the site boundary, creating a linear passage in between along the east-west direction. This is diagrammatically shown on Figure 109. Figure 110 shows how people from the street can move at the ground level in between the two buildings as shown with the pink arrows, and how people can move along the figure 8 path, as shown through the dashed orange lines. The two nodes highlighted in green are the two major public spaces

at the ground level.

Figure 109 Public circulation and building footprints
Figure 110 Public circulation and nodes

The flow of movement throughout the site at the street level will be easily navigable, accessible, and visually connected to its surroundings. As shown in Figure 111, both social nodes at the ground level will be visually connected to recreational activity on the Ala Wai Canal Promenade Park and urban activity of McCully Street and Kapiolani Boulevard. The users' ability to have this type of external connection will give a sense of orientation, comfortability, and security. The social activity in both social nodes will reflect the occurrences of their surroundings in the park or street.

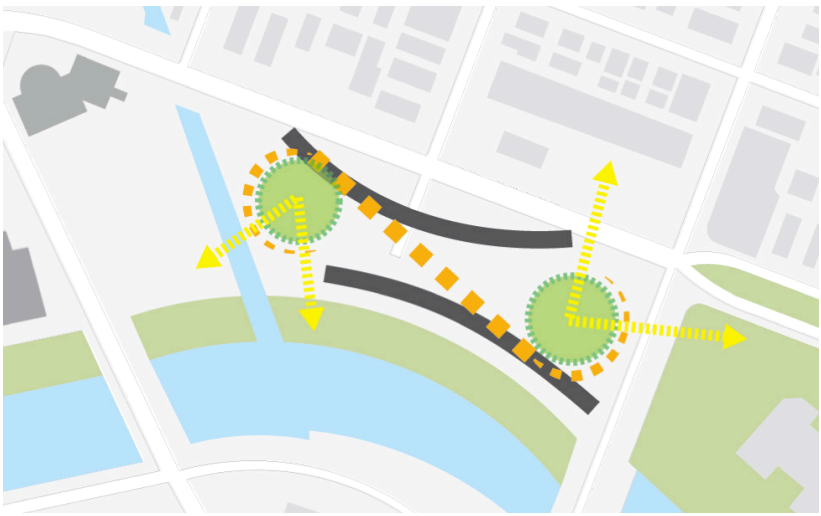


Figure 111 Legibility and access to nodes

The bridge becomes an important element in the design because it connects the two buildings, facilitating movement between both buildings to strengthen the figure 8 concept, as shown in Figure 112. The materiality for the bridge is almost transparent on both sides to allow visual connection between the interior and exterior spaces. From the bridge, people can look at what is going on at the ground level while people on the ground level can see who is crossing the bridge.

10.2 PUBLIC PROGRAM SPACES

The first three floors of the two building blocks will consist of public program spaces that serve the whole building complex. The program is carefully chosen with consideration of the existing building types and commercial programs that surround the site along Kapiolani Boulevard, McCully Street, and Kalakaua Avenue. The program also expresses current cultural trends, events, and customer needs in Hawaii. It is a mix of commercial, retail and food spaces, gallery, and a learning center. The following describes few of the major public program for the design project.

Retail spaces

The ground floor of the building that faces Kapiolani Boulevard will consist of most of the retail program spaces in the building. The public and residents can access these retail spaces, similar to the retail shops in Waikiki Beach Walk Shopping Mall as shown in Figure 112. The retail spaces are small, and can be leased by small business owners that are preferably local.

Figure 112 Waikiki Beach Walk Shopping Mall, Honolulu, Hawaii

Food and Drink

Through the analyses of various case studies, it is evident that people are attracted to places that offer various types of food and drink. With food business included in the building program, people are most likely to use the public spaces at various times of the day - from breakfast, lunch, dinner, and possibility late-night bar activities.

The program will include food and drink business at a various price ranges from high-end restaurants, bar and lounges, food courts, and food and drink kiosks. These food attractions will take advantage of the views that the site has to offer, and will be clearly visible by the general public around the vicinity.

Figure 113 Mai Tai Bar in Honolulu, Hawaii
Figure 114 Hyatt Regency Waikiki Beach Resort and Spa, Shor American Seafood Restaurant in Waikiki, Hawaii

Figure 115 The Ala Moana Center food court in Honolulu, Hawaii
Figure 116 Open–air kiosks such as the Honolulu Coffee Company and Tea Garden in Ala Moana Center

Learning center for environmental education

The overarching theme for the public program is offering a center for environmental education for children and adults. The theme is inspired by the natural surroundings of the site – Makiki Stream, the Ala Wai Canal and the Ala Wai Park Promenade. The center for environmental education can utilize the site surroundings as a way to educate people “on-site” about the existing water conditions of the canal and ways it can be improved. Visitors can also learn about how to grow their own organic vegetables, support local farms, and

properly take care of Hawaii's parks and natural surroundings.



Figures 117 & 118 Hawaii Children's Discovery Center in Honolulu, Hawaii
Figure 119 Children's community garden


Figure 120 Water literacy
Figure 121 Rendering of the communal study space in the School of Arts Singapore

The learning center will include a lobby, exhibition space, outdoor and indoor classrooms, a communal study space, bookstore, cafeteria, and offices. The center focuses on two major environmental topics – water and agriculture. With the Ala Wai Canal and Makiki Stream bounding the project site, visitors can gain awareness on the issues of water quality, water conversation, and pollution prevention. Exterior classrooms such as learning gardens and hydroponics can blend in with the green spaces of the Ala Wai Promenade Park. Children and adults can learn how to grow their own organic vegetables and understand the sustainable benefits of growing and buying vegetables locally.

Child-oriented open spaces

Children play an important part in making the learning center a successful public place. The public that choose to visit the learning center may schedule it as an all-day activity,

therefore play spaces can be offered to keep children occupied and let the parents relax. They can also buy food from the nearby food court or kiosks, or go to the nearby restaurant to make the place an all-day event for the families. These open spaces are non-exclusive and can be utilized by both visitors and residents of the buildings.

Figure 122 Playground in Central Park, New York
Figure 123 Children playing with water in Bebek, Istanbul

Successful play spaces for children are interactive ones, such as swings, jungle gyms, and dynamic water features. These spaces are oriented towards the Ala Wai Promenade Park away from the street to allow the open space to be safer and more relaxed for children and parents.

Organic food markets, farmer's market and local food truck vendors

A food market that has become widely popular around Hawaii is Whole Foods Market due to its wider range of healthier options. People who shop in groceries like Whole Foods Market look for locally grown, organic, and/or natural food ingredients. By offering an established organic food grocery store, residents and visitors can choose to eat healthy, practice healthy habits and have an overall healthier lifestyle.

A cultural trend in Hawaii is to support small and local businesses. Many local businesses include farms that grow staple vegetables and sell them for profit in weekly farmer's market events around the island such as Kapiolani Community College. Other small local businesses include mobile food trucks that congregate in a popular event called Eat the Street that is held in Kakaako Kapolei and Mililani once a month. The program will offer a

flexible open space where tents or food trucks can be situated for temporary events such as these.

Figure 124 Whole Foods Market in Kahala Mall
Figure 125 Farmer's market in Kapiolani Community College
Figure 126 Eat the Street food truck event in Kakaako, Hawaii

Entertainment spaces

Many public spaces are centered within places that offer entertainment. The Ala Moana Centerstage is situated at the center of the whole mall of the ground floor, as seen in figure 127. People moving through all four levels from one store to the next are able to hear the music playing, encouraging them to gravitate towards the central atrium where they can view the performers and enjoy the entertainment.

Places for entertainment can be successful but do not have to be designed as formally as the Ala Moana Center Stage. An open space at the center of the Royal Hawaiian Shopping Center is used for live entertainment of hula dancers accompanied by local musicians. Due to its central location, people can easily access the open space to join the audience of the entertainment. When there is no live entertainment, people are seen here relaxing in between shopping activities.

Figure 127 The Centerstage in Ala Moana Shopping Center

Figure 128 Hula dance and musical performance at the Royal Hawaiian Shopping Center, Waikiki, Hawaii

Since the figure 8 path forms two nodes instead of one, these two social nodes will feature an informal and formal open-air stage for live entertainment.

10.3 LAYOUT OF PUBLIC PROGRAM SPACES

The public program is organized diagrammatically to understand what program spaces should be adjacent to each other to create an efficient and sensible flow for human movement. Figure 129 shows the proximity between these spaces. The sizes of the bubbles reflect the floor-area relationships of the program. The colors are divided into three basic groups: learning center facilities in blue, commercial spaces in red, and open spaces in green. A few program spaces can overlap into two groups, hence the different outline color of a few spaces in the diagram.

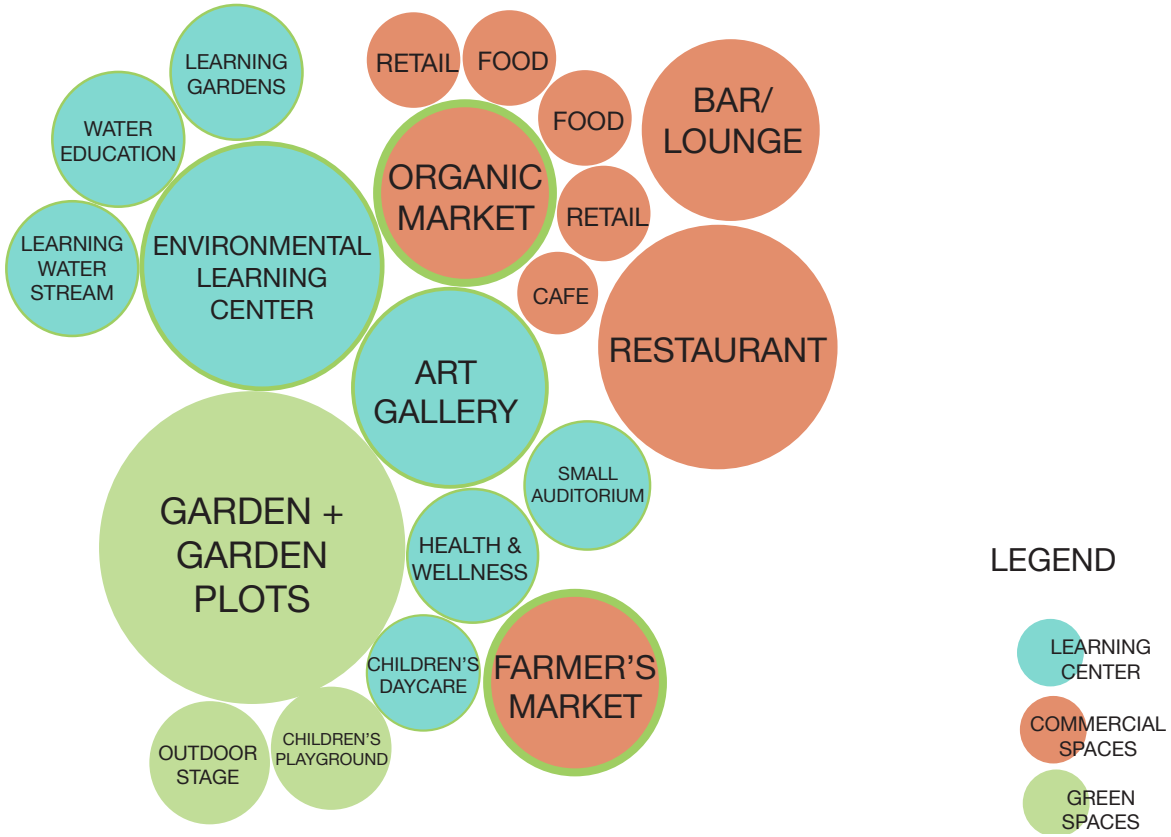


Figure 129 Proximity diagram for public spaces on the figure 8 public path

The next few diagrams show how these spaces are laid out schematically onto the site in plan view. The public program is situated within the first three floors of the building complex.

On the ground floor, the program spaces that require enclosure are located within the building blocks, while other program spaces that can be outdoor areas are located around the building blocks and concentrated within the two social nodes. An integrated water feature is a stream that begins from the Makiki Stream, flows through the center of the site and exits into the Ala Wai Canal. While this stream seems to flow the actual water from the Makiki Stream, it is actually disconnected from the stream and is circulated and maintained through the site's own water system. The water is applied to integrate the site and connect the two social nodes. It is also used as part of the environmental learning center for children and adults to learn about water, and provides an interactive water feature for children.

The second and third floors contain more private spaces such as the children's daycare center, art gallery, bookstore, classrooms, restaurant and lounge. The art gallery plays an important roll in the design because it is situated within the bridge that connects both building blocks on the second and third floors. The art gallery is a destination as well as transitional space for people to move through one end to the other.

Figure 130 Ground floor program

Figure 131 Second floor program

Figure 132 Third floor program

10.4 RESIDENTIAL SOCIAL SPACES

The residential zones, along with the semi-public spaces within the two building blocks are located between the fourth and twelfth floors of the building. A major spatial concept for the semi-public spaces is to create a strong relationship between these spaces and the private units. The purpose of doing so is to encourage more social interaction among residents to create a highly sociable neighborhood.

I propose that the semi-public spaces of the program will help turn normal social activity within the home into a social activity that can occur at the building scale. The social occurrences in the socializing core (dining room, kitchen, living room and family room) can occur in a semi-public space that offers amenities that the socializing core in a private unit lacks. These include: 1) more space, 2) good natural lighting and ventilation, 3) better views of the outdoors, 4) better amenities (such as kitchen appliances, televisions and furniture), 5) the option to reserve the semi-public space, and 6) the option to visually enclose it temporarily from other residents, all of these besides the function of the semi-public space itself. The ratio of public and semi-public space in the residential dwelling will transition from around 20% of floor area for social space to about 40-50% in a social residential dwelling.

As shown in Figure 133, the conventional double-loaded corridor lacks any access to social space, either public or semi-public. Residents are given a view of the outdoors on one wall of their private unit as the only connection to the outdoors. It is typically found that the kitchen and bathroom spaces lack windows. Sadly as previous research proves, the most important part of the socializing core, the kitchen, needs a direct connection to outdoor views. Sadly, conventional private unit layouts do not consider this idea.

There is little variation between the spatial layouts of the residential units, which are designed to be socially isolated from one another. The revised private unit layout scheme proposed for this project intends to increase the quality of the private unit – by 1) Providing more than one wall for windows and exterior views, 2) Highlight the private unit's socializing core (Kitchen, dining room, living room and family room) as the most visually-connected space to the outdoor views and public corridors, and 3) Promote greater variety in private

unit layouts.

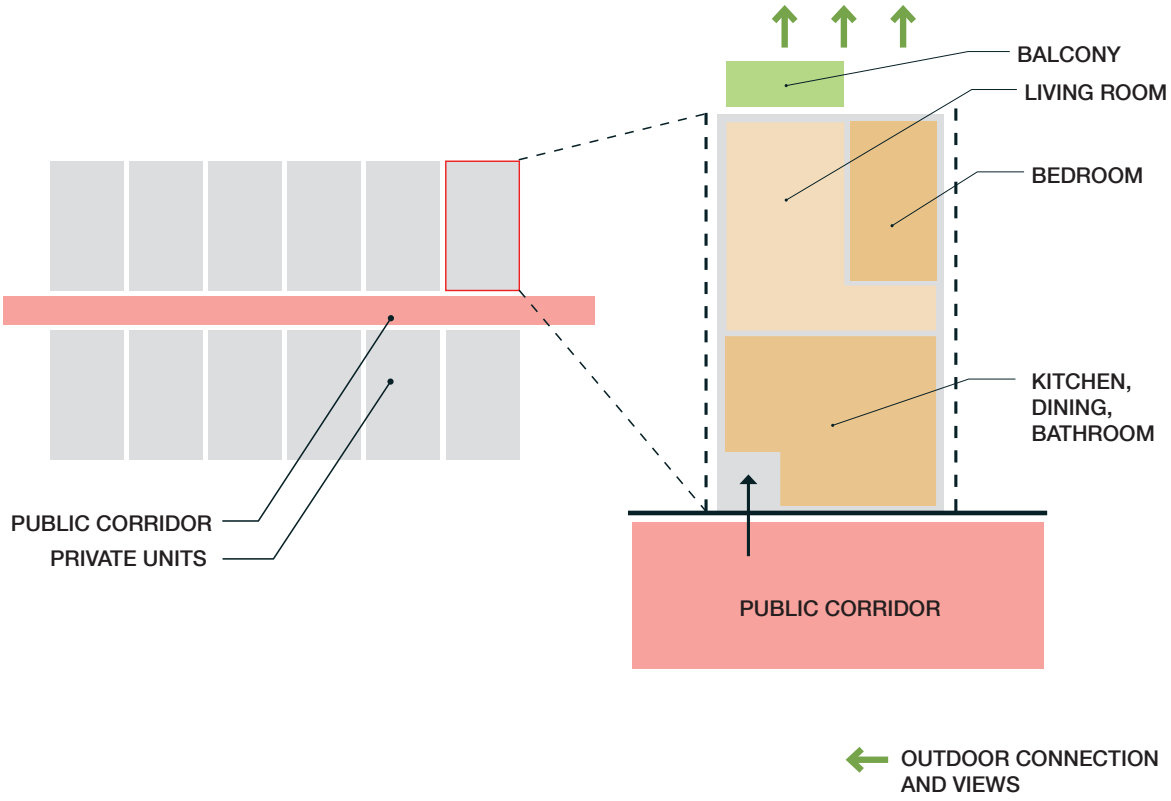


Figure 133 Diagram of typical residential floor layout

Figure 134 shows how the conventional residential floor plan is rearranged to accommodate the flow of social activity within and between semi-public spaces. The diagram depicts each unit's relationship between other units and its connection to the outdoors. With this rearrangement, the typical layout of an individual unit is also transformed. Since windows are offered on two edges instead of one edge, households have more access to natural day lighting and more opportunities for natural ventilation. The bedrooms maintain privacy and face away from the public corridors, while the socializing core faces the atrium and across, its neighbor.

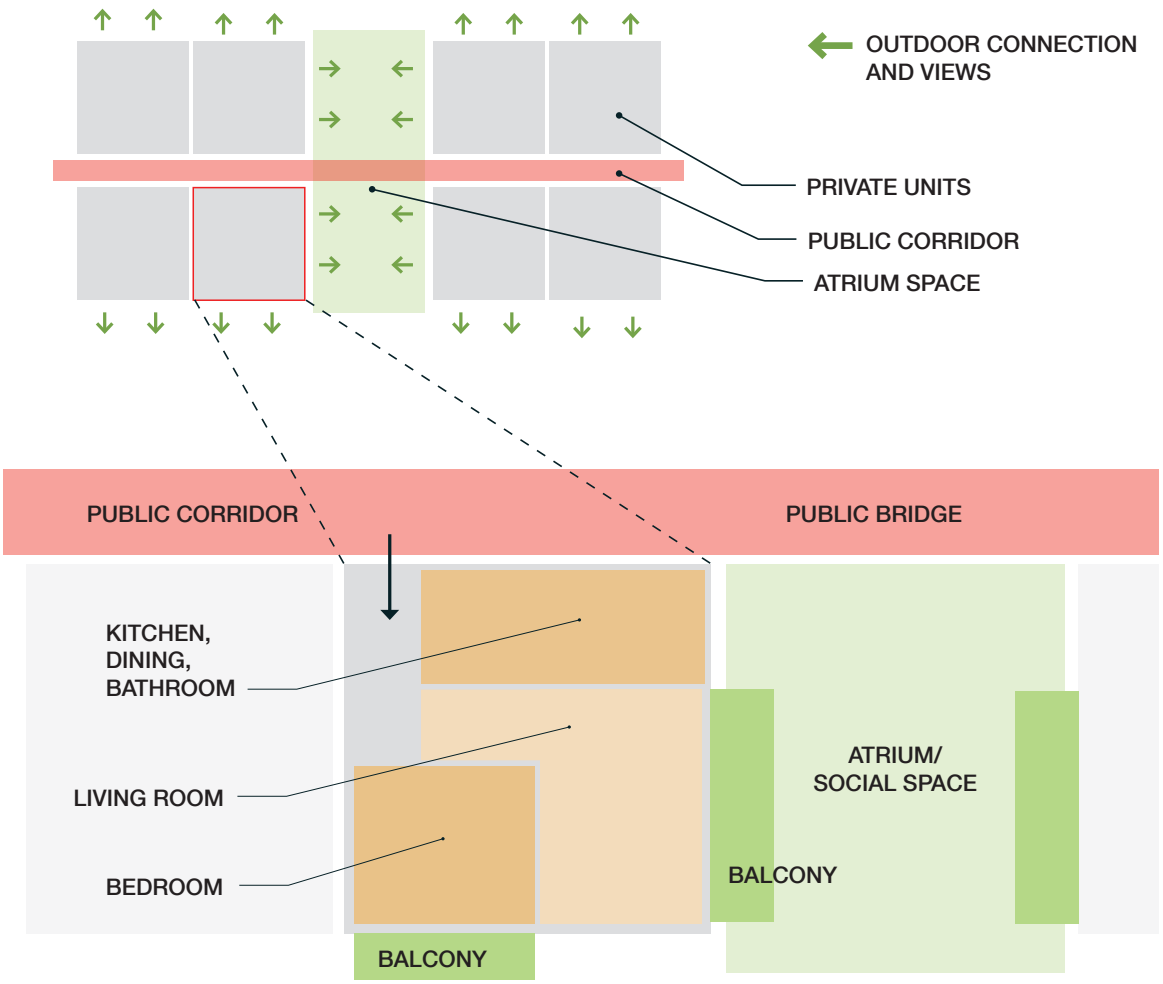


Figure 134 Diagram of revised residential unit

This layout orients each private unit towards the social spaces of the buildings. This gives opportunity for neighbors to become better well exposed and familiarized with their neighbors and a higher possibility to socialize with them. While the building corridors in conventional residential units are enclosed, private and monotonous, the combination of corridors and atria in this design become semi-private for residents and visitors with various opportunities to pass through social spaces and look into social spaces from a distance. The semi-private corridors then become enhanced with social activity without even having to be inside a social space. People will encounter other people more often, becoming more familiarized with each other and enhancing human security.

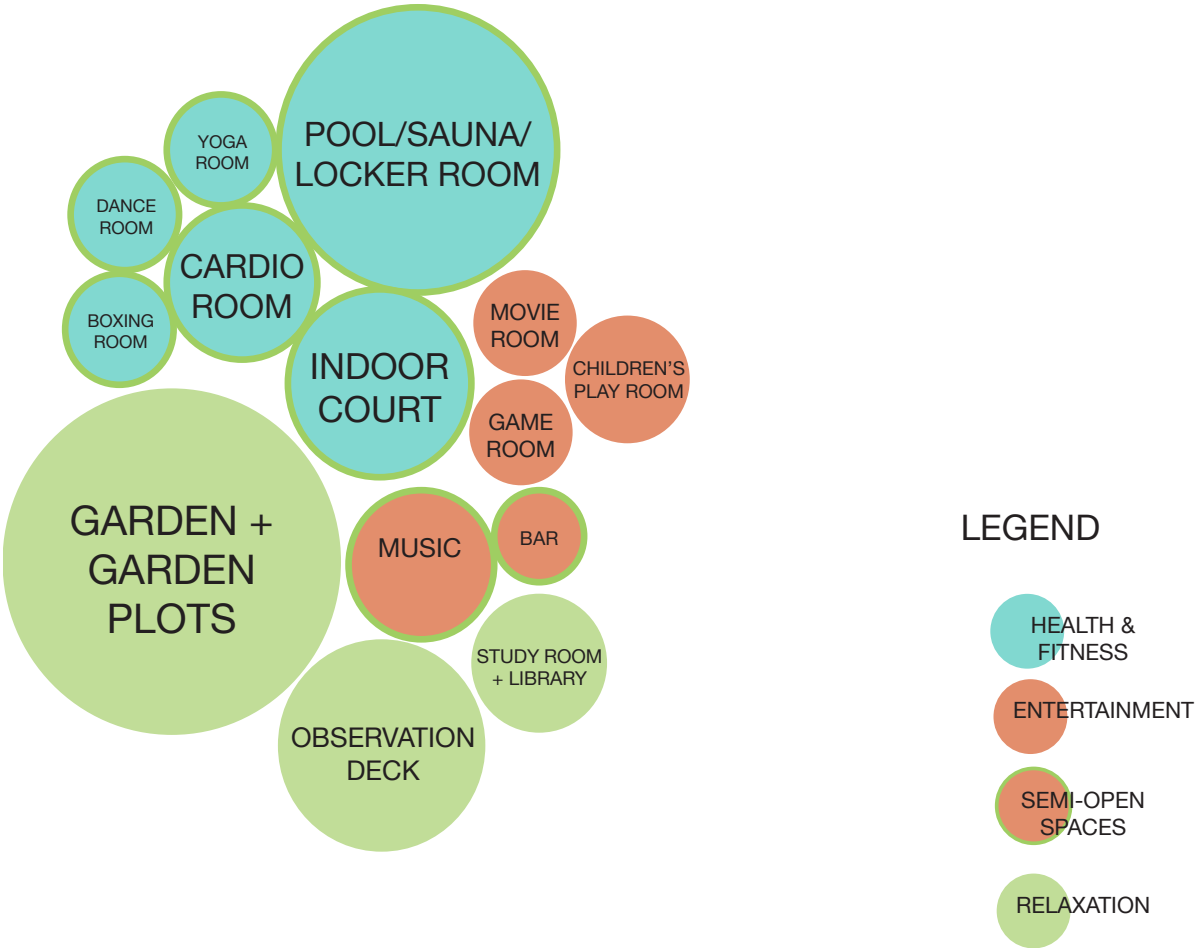


Figure 135 Proximity diagram of semi-public spaces

Figure 135 depicts the semi-public spaces that will become integrated with the private units to transform the conventional residential high-rise to a more sociable urban dwelling. These semi-public spaces will become accessible for public visitors during specific opening hours to maintain night time privacy for the residents of the buildings. The colors identified in the proximity diagram represent zones for health and fitness (blue), entertainment (red), and relaxation or open space (green). Most of these spaces have the opportunity for residents to reserve them for a private party (for example, a pool party). With set rules and regulations, these spaces can become the vibrant zones of the neighborhood.

The purpose of integrating semi-public spaces with the private units is to increase the chances for occupants to socialize with one another, whether they are strangers, acquaintances, friends, or family members. The semi-public spaces offer neutral zones for these people to engage in conversation and hold small get-togethers without needing to

invite each other to their private home and creating the sometimes uncomfortable guest and host relationship. With the provision of more floor area dedicated to these social spaces, the design intends to invert social activities from the private unit socializing core to the socializing cores of the whole building as much as possible.

While holding social activities within private units may be comfortable for some, the design encourages them to carry them out into the semi-public spaces by providing incentives. For example, the design of these semi-public spaces will be a much more enhanced environment from the socializing core of a private unit. Unlike the private unit, the semi-public spaces will have better views and outdoor connections, indoor landscaping, better natural day lighting and ventilation, more space (a plus for larger parties), more seating furniture, and better amenities.

10.5 SPATIAL FORMATIONS

This section intends to show the design process through three-dimensional computer simulation and modeling. The design is molded by integrating residential micro neighborhoods, semi-public spaces and public spaces on the figure 8 path.

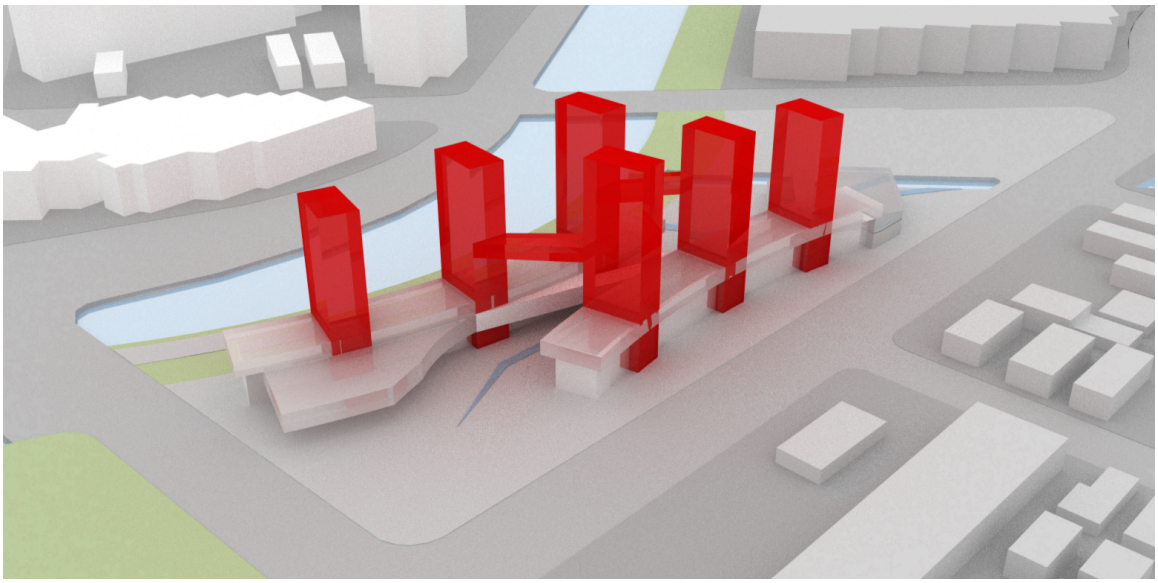


Figure 136 Concept Design: Vertical Spaces: Atrium

Each building footprint is divided into four sections through a series of three atria, as shown in red in Figure 136. The atria will be combined with the vertical circulation that includes the elevator shafts and egress stairs. Two of the three atria are connected through bridges that will also integrate a program for social space. The bridges will enforce the connection between the two buildings, beside the bridge path found on the second level.

The purpose of the atria are to break down the horizontal monotony of the conventional apartment building, meanwhile acting as a spatial element to let in more light and ventilation into the private units. The atria will be well-lit during the day.

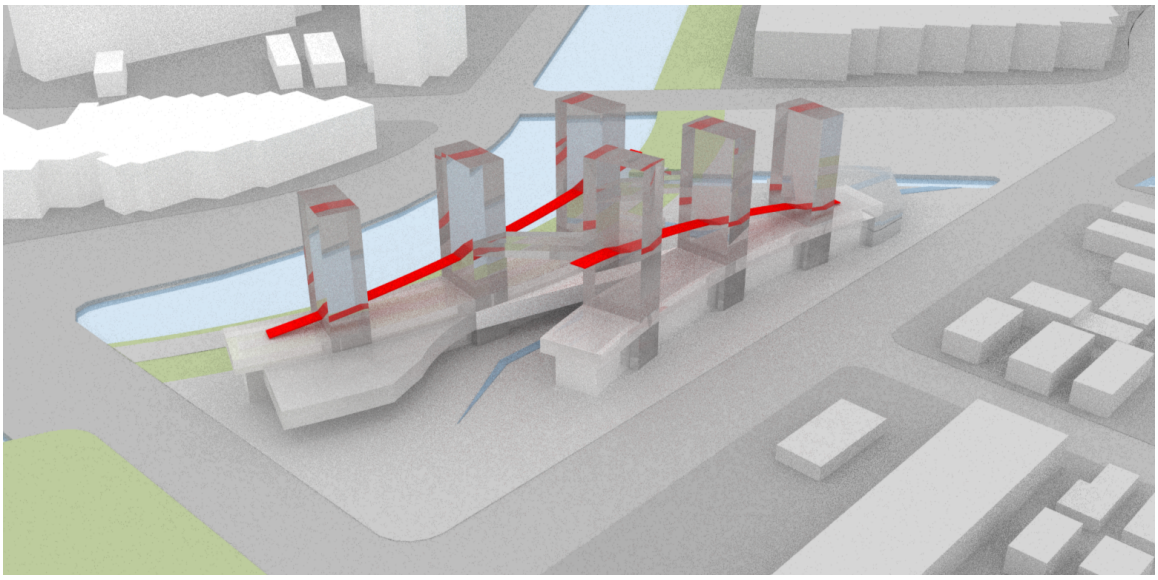


Figure 137 Concept Design: Ramps

Each building will also have a single inclining ramp that crosses through the length of the building at the center, connecting the three atriums in the third dimension. This ramp will be the most used corridor that will connect the semi-public zones together. Similar to the ramp, each building will have four main semi-public zones that incline with the ramp as shown in Figure 137.

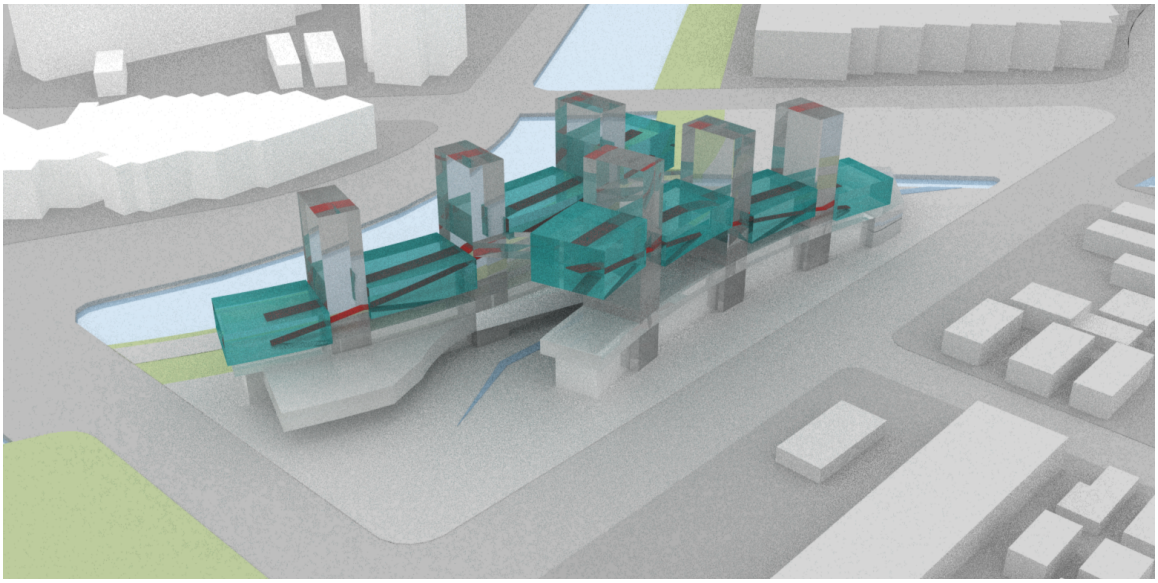


Figure 138 Concept Design: Social Spaces integrated within the residential units

Figure 140 shows the remainder skeleton of the building that is the floor plates dedicated for the private units. This diagram shows how the social spaces become highlighted on the building's façade, making them apparent through double-height ceilings. There are separate corridors that access private units not directly connected to the semi-public social spaces.

To the variation in private unit layouts, each private units will have different square footages. The design of the façade used this characteristic as an opportunity for the façade to become dynamic. As seen in Figure 141, the volumes of each private unit are protruding and receding, allowing the façade to become more dynamic. For some units sitting above the protruding private units, can use them as a more floor area for outdoor balconies. The façade will have variations of wood, glass and concrete materials to visually define the semi-public space, atria and private units from the exterior.

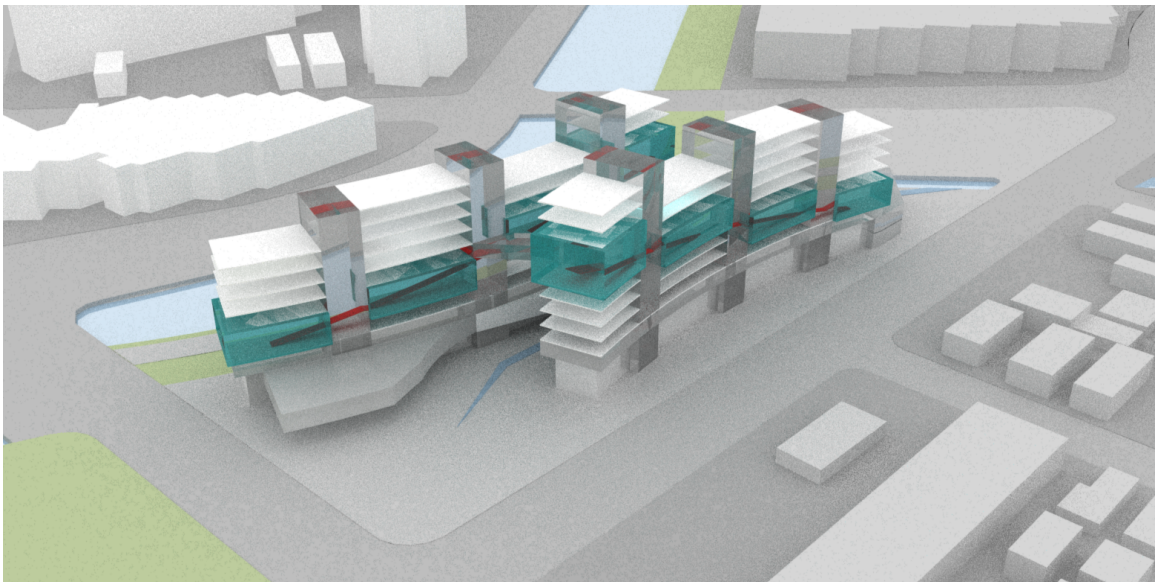


Figure 139 Concept Design: Floor slabs for residential units

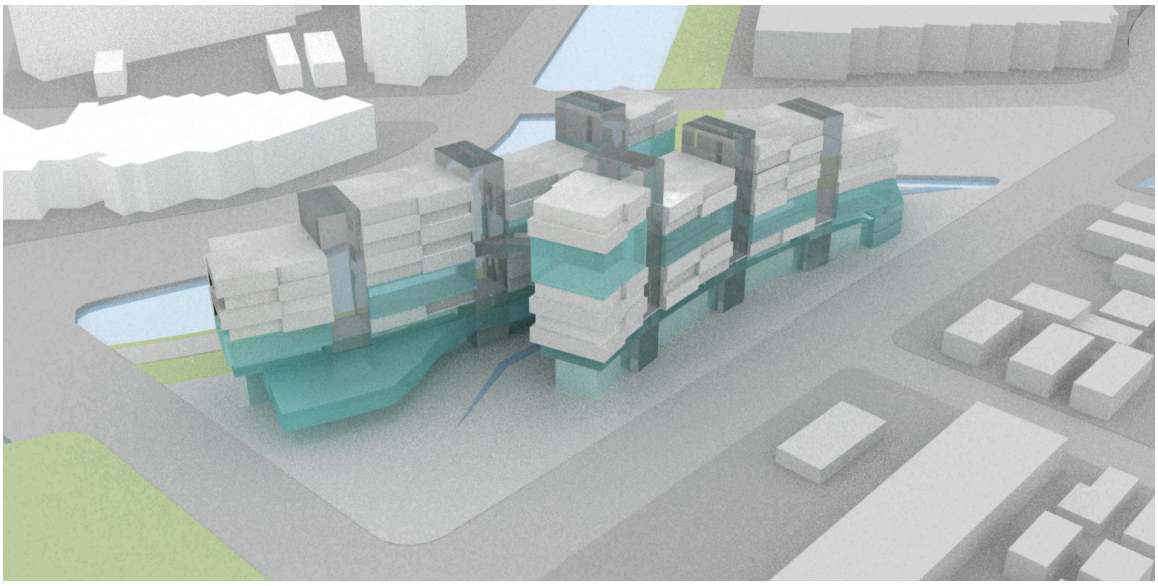


Figure 140 Concept Design: Residential unit infill

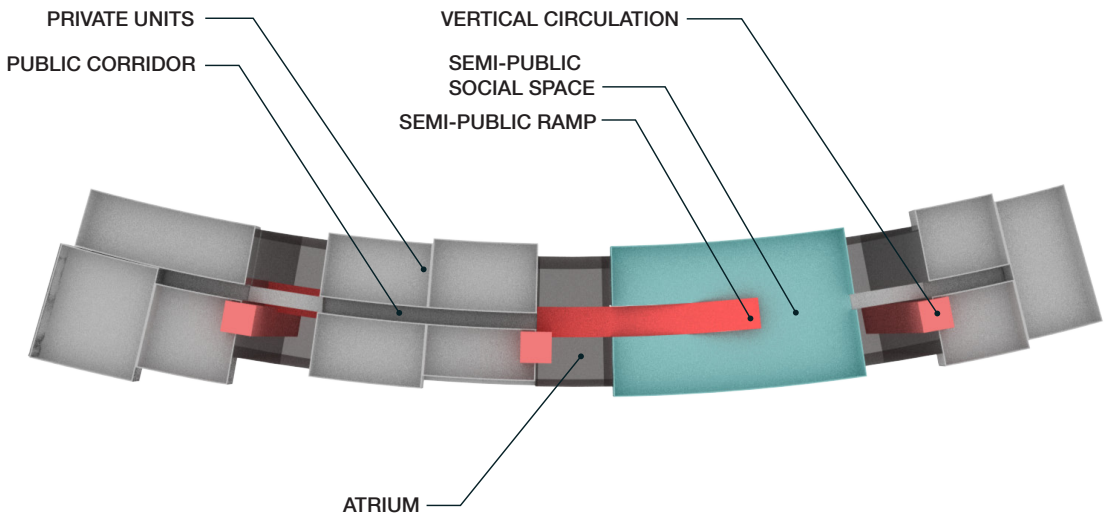


Figure 141 Typical plan view of private units, social space, vertical circulation and atria

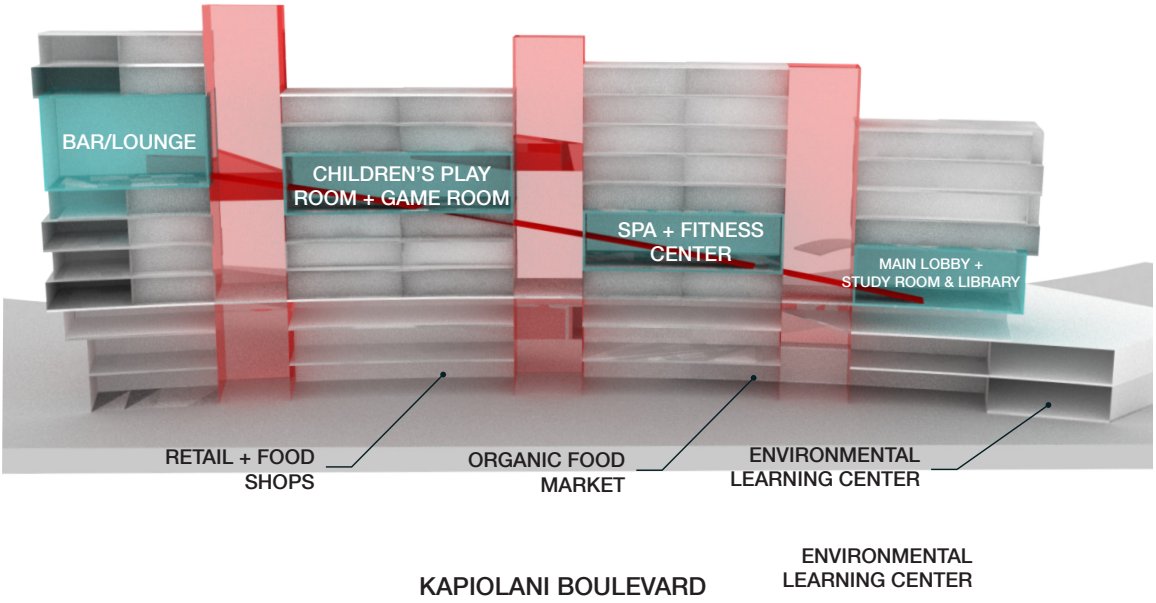


Figure 142 Section rendering

Figure 142 depicts a longitudinal section of one building to explain how the private units, semi-public units and atria intermingle with one another as a dynamic social neighborhood. In most private units, residents will be able to look into the corridors and semi-public spaces, in a similar way that a resident in a private unit can look onto a playground at the street level from their balconies. Though it is possible for people within the semi-public space to look into private units, residents have the option to draw their curtains or louvers to maintain their privacy.

The ramp becomes the continuous, connecting element between the semi-public spaces. The simplicity and central location of the ramp will allow visitors to be easily oriented through the building while being well-exposed by the residents of the building. The semi-public spaces can also be accessed by elevator.

10.6 CENTRAL COURTYARD (CONCEPT DESIGN)

The purpose of the central courtyard is to create both a transitional and destination social space for all users of the site. The most active part of the figure 8 is seen in this area, where one longitudinal axis crosses the other. Throughout the movement within the figure 8 path, one can maintain orientation through view corridors and because of the low opacity of the walls lining the social spaces. The social spaces on the levels above the ground are kept low (one to three stories) so that viewers from the street can see what is happening, be attracted to the space, and hopefully engage in social interaction with other people in the space.

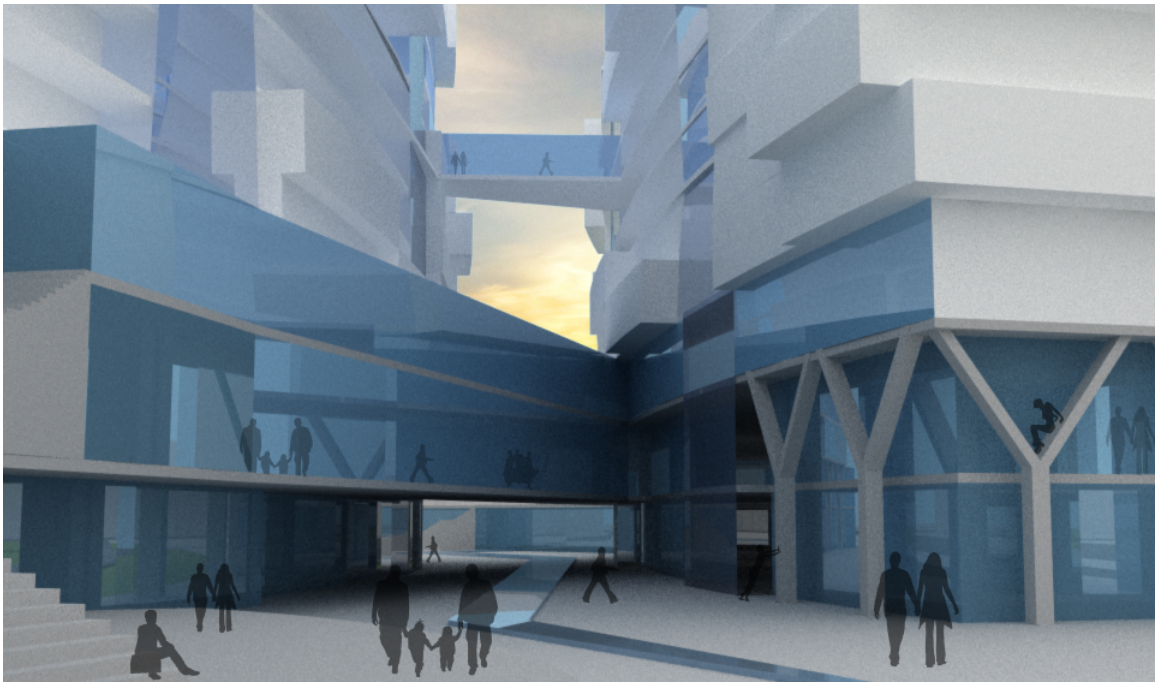


Figure 143 Interior Perspectives of the Central Courtyard and Bridge

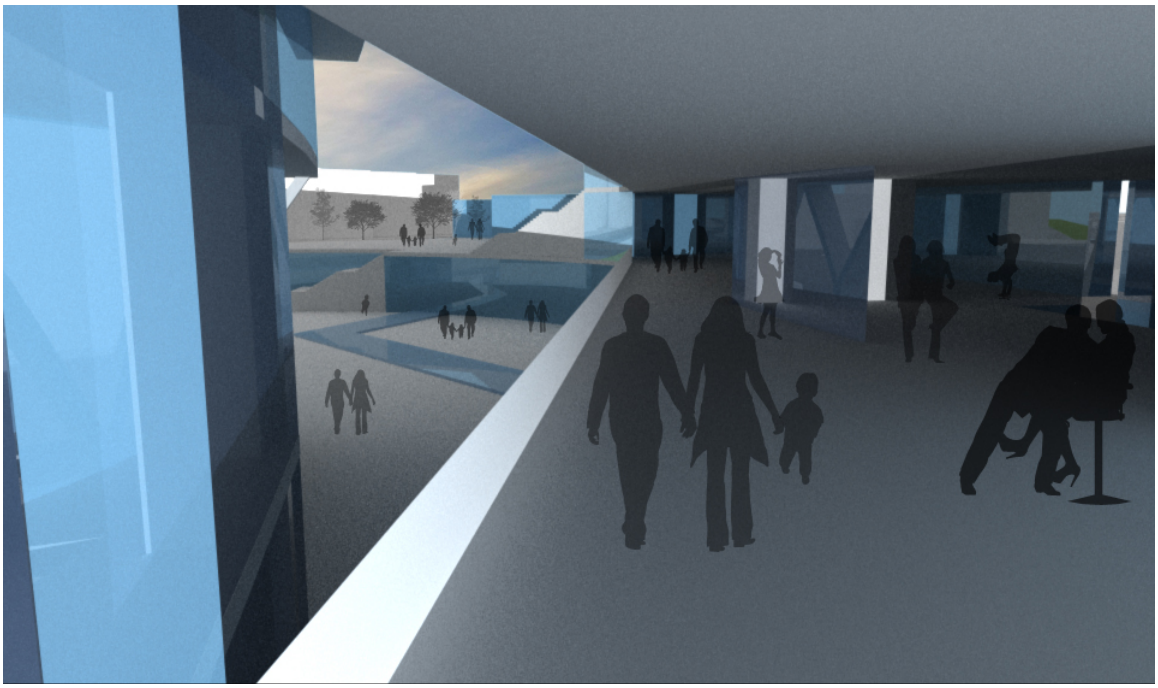


Figure 144 Interior view of the pedestrian bridge looking over onto the west node

The purpose of the central courtyard is to become the cohesive element that binds the figure 8 path. Visitors will be able to visually interact with others, regardless of the distance between each other. The ability to read social activities that occur on other areas of the site increases the vitality and sociability of the street experience.

Though the public paths are maintained through private ownership, the relationship between a private and public space becomes ambiguous through the visitor's experience within the site.

Maintenance will be provided by the property owner to maintain cleanliness, safety, and security. Residents living in units facing the central courtyard will provide added security at all times of the day.

10.7 EAST NODE: URBAN (CONCEPT DESIGN)

The east node, as found in Figure 144, will be surrounded by retail and food spaces, seating elements and a stage area to create an active public space that can be seen from Kapiolani Boulevard and McCully Street. The east node is semi-enclosed and exposed towards the street intersection to encourage people to enter and participate in the activities within the site.

The east node contains a large open-air stage for various types of entertainment throughout the day. People walking through the atria and sitting in the semi-public spaces adjacent to the east node are able to see what is happening at the ground level.

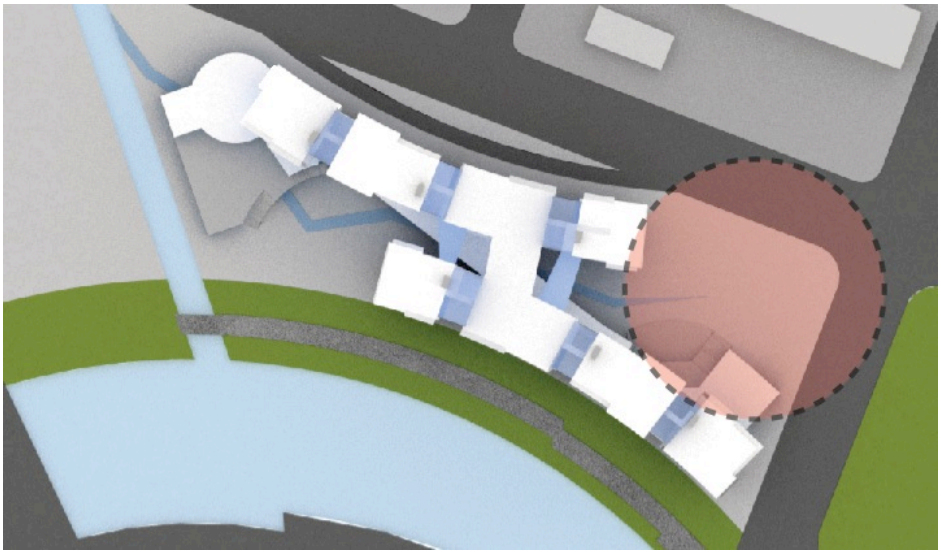


Figure 145 Location of the east node in plan view

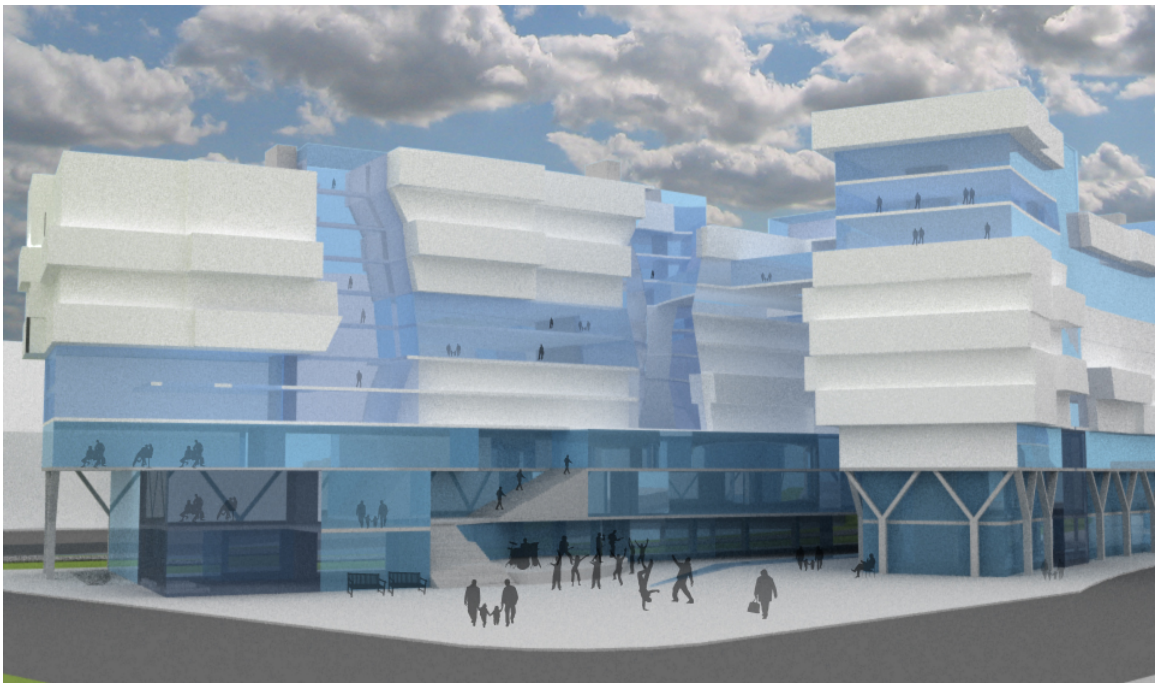


Figure 146 View of the east node from Kapiolani Boulevard

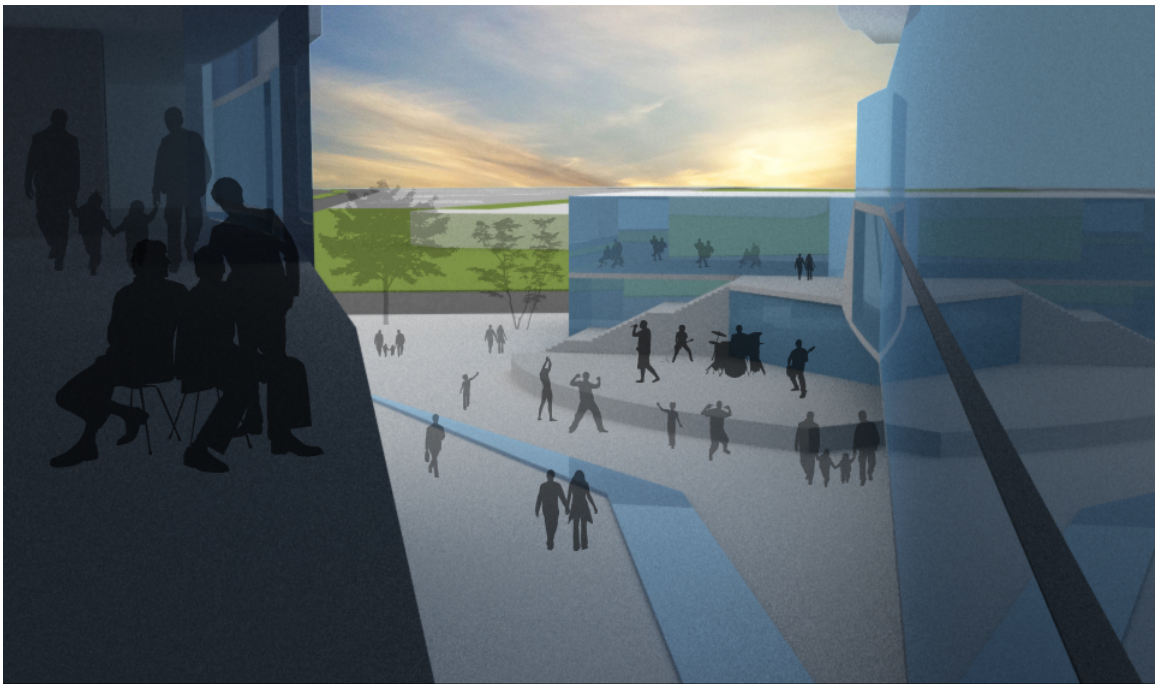


Figure 147 View of the east node from the pedestrian bridge

10.8 WEST NODE: RECREATION (CONCEPT DESIGN)

The west node will be more tranquil and private relative to its sister node on the east. This public node is dedicated towards recreation, as it faces the Ala Wai Canal and has a direct connection to the Ala Wai Park Promenade. Here, it is safer for families to bring their children to play in the playground and to rest while visiting the environmental learning center. People will have a nice view of the Waikiki skyline as they walk or jog near the west node.

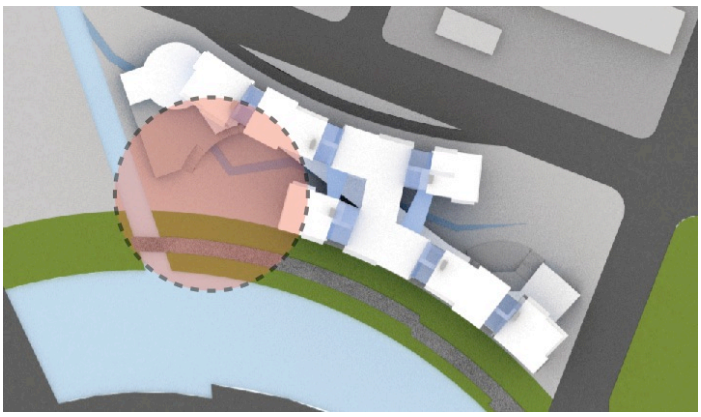


Figure 148 Location of the west node in plan view

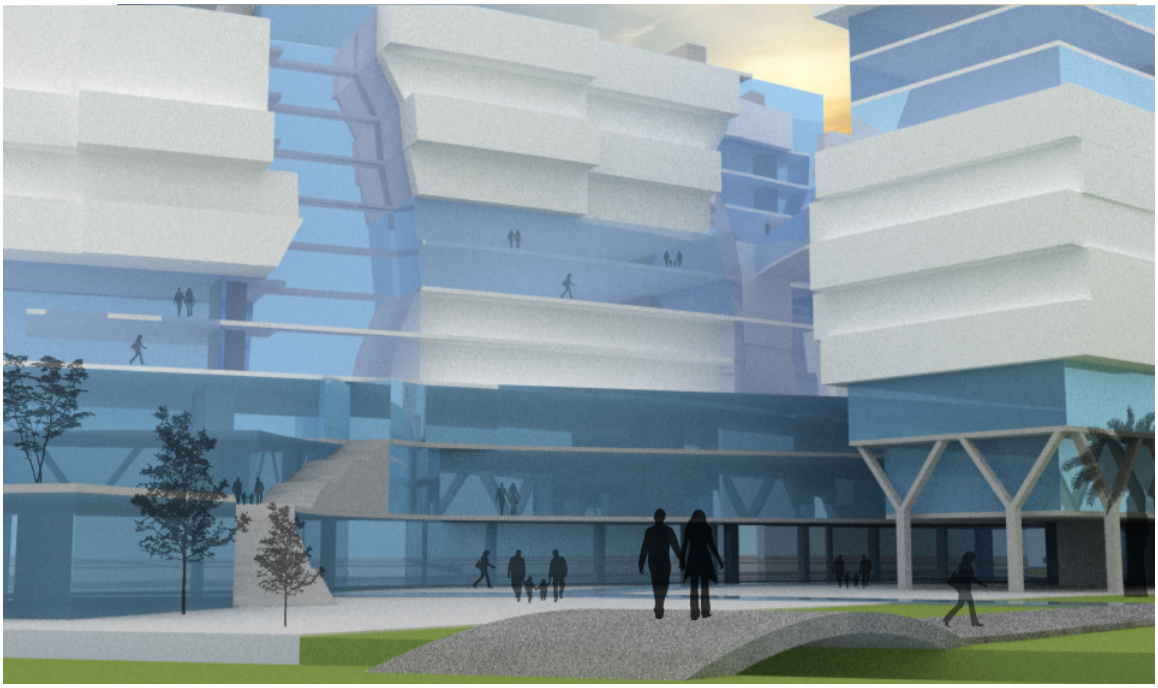


Figure 149 View of the east node from Ala Wai Park Promenade

10.9 MICRO NEIGHBORHOODS (CONCEPT DESIGN)

The idea of “micro neighborhoods” come into play through the atrium spaces. As mentioned previously, the revised layout of the residential units help enhance the quality of social lives by increasing the visual connections among people that live in or visit the buildings. Figure 150 shows how the atrium space, semi-public spaces and residential space continuously interact with one another. Through the revised residential layout, privacy is maintained within bathroom and bedroom spaces.

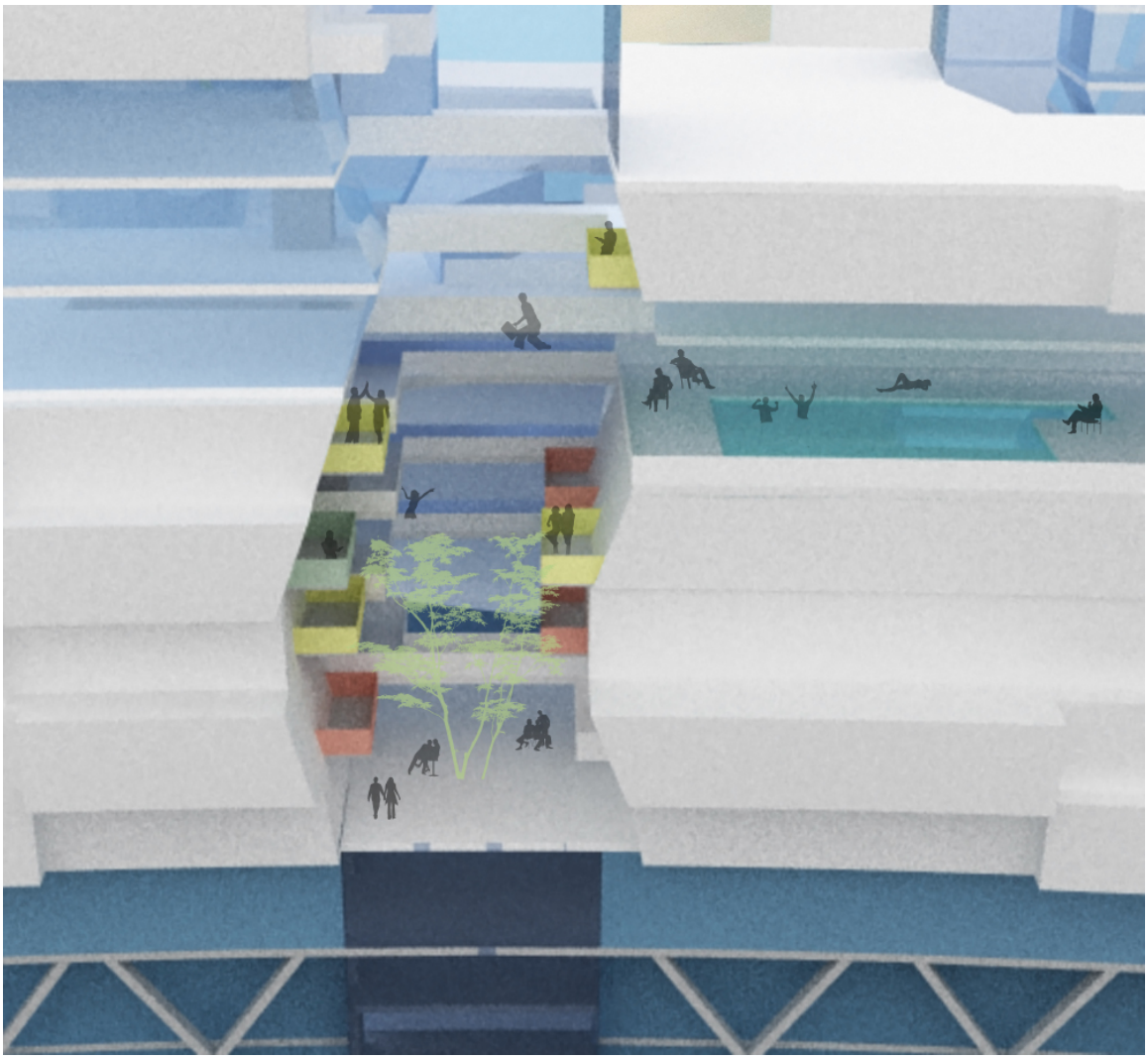


Figure 150 A simulated view of a flexible semi-social space dedicated that can be used for live entertainment, bar, night club, or a family party

Bridge as a Gathering Space for the Public

The pedestrian bridge functions as a public gallery and communal space for people of all ages. The pedestrian bridge connects both buildings on the second floor, playing a key role in the figure 8 public path.

Micro Neighborhoods

There are six main atria within the building complex that serves as three micro neighborhoods to reduce the massive scale of the two buildings into human scaled neighborhoods. By orienting private balconies and public corridors towards the atria, residents and visitors have a stronger visual connection between one another. This method increases the likeliness for social interaction, friendships, human security within the neighborhood and an overall higher quality of social living.

Semi-Public Social Spaces

The social space depicted in this simulated rendering represents one of the larger semi-public social spaces within the building complex. This space is available for residents and the public for daily events and can be privately reserved for private events by residents. The semi-social spaces provide many amenities, including various types of furniture, appliances, natural day lighting, and abundant outdoor views of Honolulu. The semi-public spaces can be accessed through elevator and the main public ramp. To reserve quiet living environments and privacy at night, these spaces are not open 24 hours a day.

CONCLUSION
REFLECTING ON THE NEW URBAN RESIDENTIAL HABITAT

Integrated Social Habitats: Enhancing Social Spaces for Future Urban Dwellings is written to encourage designers and architects to prioritize social spaces and integrate them into future design schemes of urban residential habitats. This body of research presents the positive and negative effects of social interaction or lack thereof. While social spaces and third places exist in public parks, shopping malls, educational institutions, and work settings, the benefits of social life can increase if people are given more opportunities to socialize with neighbors near their own homes.

Universal Principles for the New Urban Residential Habitat

1. Apply social spaces into the building program in a holistic manner to encourage and nurture social interaction within living environments. Encouraging social interaction on a daily basis can increase one's happiness, health, and vitality inside and outside of his/her habitat.

2. Social spaces should offer a variety of activities, amenities, safety, and easy accessibility. They should also simultaneously offer levels of privacy for private dwellings.

3. Create a sociable environment in relation to its site, cultural and regional context, and its needs.

These universal principles can be applied beyond the residential building type. The application of social spaces within office, retail, educational, and institutional building types continues to be researched and implemented extensively.

Throughout the process of writing this doctoral thesis, I have gained a greater appreciation for existing social spaces and public spaces. I now realize the overarching sociological benefits of human interaction and how important it is to utilize the social spaces that exist today.

This doctoral thesis is not a final set of guidelines, but a stepping stone to future research and a continued work in progress. I hope that my enthusiasm extends through these

explorations and encourages readers to establish new interests and a greater awareness of social spaces in urban residential habitats.

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